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MONTANA OUTDOORS

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the cover

Although Red Rock Lakes National Wildlife Refuge was created primarily for the trumpeter swan, it also benefits many other species. In the past, refuge lands have not always been managed with the best interests of wildlife in mind. Hank Fischer's article on page 35 describes how managers are moving to correct past mistakes. The Stillwater Complex on the northern edge of the Beartooth Mountains in south central Montana contains rich deposits of valuable minerals. Turn to page 19 for details on how the area will be developed and what it will mean to fish, wildlife and recreation.
Front cover photo by Harry Engels.
Back cover photo by Harrison Fagg.

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a livable environment for WILDLIFE is a quality environment for MAN

REFLECTIONS

Looking back on recently ended Montana hunting seasons, we all remember some small thing that became vividly etched in our minds. Perhaps it was "the big one that got away," or a particularly good day in the fields hunting geese, or maybe it was merely the sights, sounds and colors of an unforgettable fall day while afield. Whichever the case, most Montana hunters would agree that this state offers much in the way of hunting opportunity.

Most would also agree that hunting is important to Montanans. In fact, we in the department have boasted many times about this—in articles, at meetings, to fellow workers and to the public in general. Now, however, we have information from our game harvest surveys that documents and emphasizes the importance of Montana hunting.

Each winter, questionnaires go out to a sample of sportsmen. Thanks to their cooperation, we are able to come up with a very close estimate of the game harvest each year, and we can determine just *how* popular hunting is.

In 1974, for example, Montana game animals and birds provided over 2.5 million man-days of hunting recreation. As in past years, deer hunting topped the list in importance, followed by elk hunting and so on down the list:

	Total harvest	Man-days of hunting recreation
deer	103,656	1,235,177
elk	10,577	719,034
upland birds	339,615	238,397
ducks	203,581	147,734
antelope	18,810	81,489
archery	663 (deer) 81 (elk) 47 (antelope)	71,887 (total)
geese	12,281	68,714
black bear	1,527	50,235
sheep	134	6,992
moose	532	5,460
turkey	873	5,149
goat	306	2,855
Total man-days of hunting recreation		2,633,123

The survey results support our contentions about the popularity of Montana hunting. But more important, the figures applaud the amount of high quality outdoor recreation Montana game populations provide each year.

Indeed, Montana is fortunate to have such a large and diverse array of game to offer sportsmen. With all the problems our game populations, and wildlife in general, face in the future, we only hope they can continue their important contribution to the Montana "way of life."

Wes Woodgerd

Wes Woodgerd, Director
Department of Fish and Game

The North Fork of the Flathead above Polebridge (above, F&G photo by Bill Schneider). The cutthroat, a primary game fish in the North Fork and an indicator of high water quality (right, F&G photo by Bill Schneider). Canoeing (upper right, F&G photo by Tom Warren). Leisurely float (middle right, F&G photo by Bill Schneider). And the scenery is outstanding (lower right, F&G photo by Craig Sharpe).

GOOD-BYE NORTH FORK?

by Bill Schneider

How much will we sanction to secure comfortable supplies of fossil fuels, to live at 72 degrees, to ride elevators up 2 floors, to continue making—and throwing away—aluminum beer cans, to drive 10 blocks to work alone while letting the bicycle gather dust in the garage?

Will we sacrifice our last wildlands and wildlife country for bigger bathtubs, four-wheel-drive mobile homes, lighted outdoor advertising, tourist roads, second homes and snowmobiles?

Is extensive energy development the best use of the national forests? How far will we go to maintain our high standard of material living?

Residents of northwestern Montana are—or *should be*—asking these questions right now, as they prepare for the unnecessary destruction of one of America's purest and most beautiful river systems—the North Fork of the Flathead. Captives of megalopolis should ask these same questions. They are a big part of the problem. Or perhaps they favor any and all development to keep the air conditioners going, regardless of the environmental and social expense.

The North Fork forms the western boundary of Glacier National Park, so the scenery is outstanding. Wildlife abounds. Montana grayling, cutthroat, Dolly Varden, rainbow trout, kokanee and mountain whitefish inhabit the river. Some logging and residential development has occurred along the west side of the river. But the North Fork remains pure—something you can't say about many major rivers nowadays.

The specter of rapid demise appeared on the horizon in September 1974 when plans for the Cabin Creek development became known. Rio Algom Mines, Ltd. (part of one of the United Kingdom's largest industrial conglomerates, Rio Tinto Zinc, Ltd.) hopes to open pit mine coal, cleanse it of impurities and then transport it to Japanese steel mills.

Cabin Creek cuts through some scenic backcountry only eight miles north of the Canadian border, before joining the North Fork which, in turn, crosses the border on its way to Flathead Lake.

Briefly, Rio Algom created a subsidiary, Sage Creek Coal, Ltd. (with 35% of the money coming from a U.S. company, Pan Ocean Oil) to develop this area. The company's plans call for complete removal of two mountains, most likely a new townsite with 3,000-7,000 persons, a large processing plant to remove impurities, a 40-megawatt coal-fired power plant just to run the mine and town, a new highway into the mine site (probably from the north) and a 60-mile rail spur to get the coal out.

continued

Those are the direct impacts. The indirect, far-reaching, not-readily-comprehended impacts include promotion of second home subdivision along the river, loss of wildlife habitat, water quality degradation, air pollution, more commercial development and increased human activity. (See "Making Molehills Out of Mountains" in the Sept./Oct. 1974 issue of *Montana Outdoors.*)

When you add all this up, the indirect impact of the Cabin Creek project—much of which will spill over the border into Montana—probably outweighs the damage of the actual development. And the ramifications of Cabin Creek magnify greatly when considered *along with* other pressures on the area—such as the proposed gas development. North Fork fans were just recovering from learning what the Cabin Creek development might do to their land and lives when the gas company came.

In February 1975, the Flathead National Forest received applications to explore and develop oil and gas resources on 236,000 acres of public land in the North and South forks of the Flathead. The leases cover some of the area's best big game winter range, choice spawning streams and prime backcountry including part of the Bob Marshall Wilderness, the proposed Great Bear Wilderness, lands recommended for inclusion under the Wild and Scenic Rivers Act and other roadless areas.

The leases came from Texas Pacific Oil Co., a U.S. company owned by whiskey executive, Joseph Seagram. Texas Pacific similarly applied to the state of Montana for 7,760 acres of state land in the Coal Creek area of the North Fork.

Don Irvine, spokesman for Texas Pacific, feels the likelihood of finding gas far outweighs that of oil. He cautioned that his company was, of course, interested in finding both. But he termed the chance of finding an economically feasible gas deposit as "nine out of ten." Dispelling rumors to the contrary, Irvine said that Texas Pacific definitely wasn't interested in mining coal and, in fact, couldn't even determine existence of coal deposits with its exploration methods.

Irvine briefly describes probable gas development as a system of roads, pipe lines, power lines and one or two large "refinery-like" plants that are best located "in the center of the gas field," which, in essence, lies in the center of the North or South forks. Initial exploration includes driving a large "vibra-sensor" weighing many tons around on existing roads and taking seismic readings of the rock strata below.

Exactly what gas development would mean to this fragile area was—or perhaps I should say, was supposed to be—the subject of a draft environmental impact statement (EIS) written by the Forest Service (FS) in June 1975. Considering the magnitude of the possible development, the EIS was below par. In fairness, though, the Flathead National Forest has never faced such an issue and the statement writers were pressed for time.

Usually, the FS writes a draft EIS, receives comments and then writes a final EIS containing the agency's recommendations. But in this case, it's hardly that simple. In fact, it's mind boggling.

First, the FS (U.S. Department of Agriculture) doesn't have the authority to approve or deny the leases. The FS merely *recommends* action to the Bureau of Land Management (U.S. Department of the Interior) which then refuses, modifies, accepts or conditionally accepts the FS recommendations.

In this case, the FS wrote the EIS because most of the development would occur on national forest land, and the FS is responsible for managing surface values on that land.

If the developer doesn't like the Bureau of Land Management's action, he can appeal it to the Interior Board of Land Appeals, a nongovernmental body composed mostly of attorneys. The board decides on the legality of the action. If the developer doesn't agree with the Interior Board of Land Appeals' decision, he can still go to the courts. On the other hand, there is no mechanism for citizen appeals. If a citizen group dislikes the Bureau of Land Management's action, it would be forced to go directly into the courts.

Commendably, the FS suggested refusing the leases on some of the most fragile lands—i.e., part of the big game range and most roadless areas. However, the draft EIS still recommended going ahead with 165,781 acres in the North and South forks.

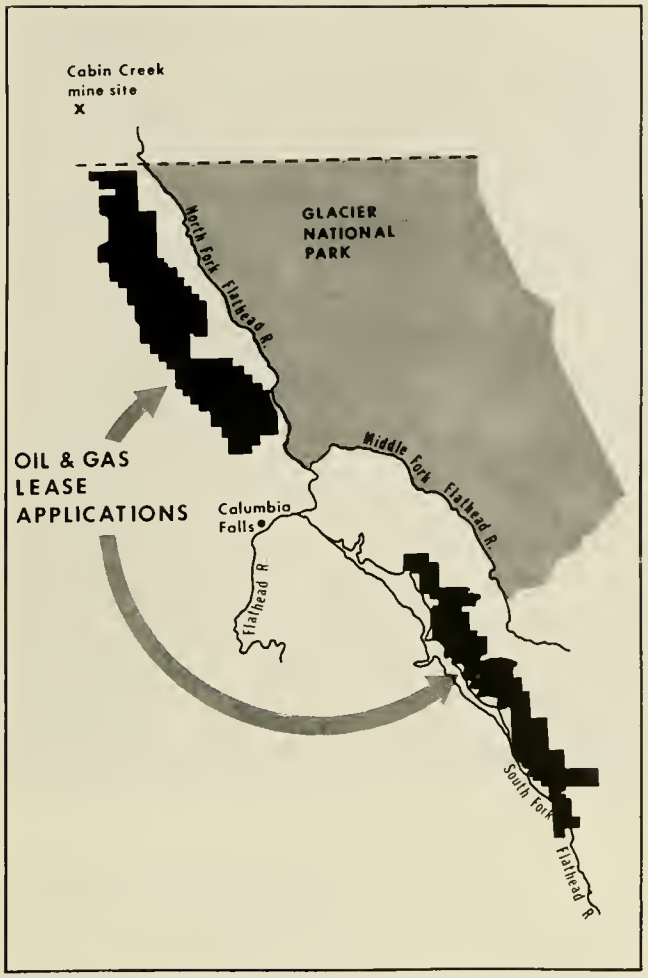
One of the most common criticisms of the EIS was its failure to fully address the ramifications of *developing* the exploration leases. Without reading the EIS carefully, one could get the opinion the leases covered *only exploration.*

And the leases *will* allow *both* exploration and development. "When you grant privilege to explore, you grant privilege to develop," Bob Gibson, long-range planner for the Flathead National Forest, explains. However, Gibson qualifies it by saying the FS still controls some details of development under lease stipulations. Also, a major development would require another EIS. But the development *couldn't* be denied.

The companies tend to pooh-pooh the impact by saying they're only exploring for now. We'll talk about development later, they say.

True, the impact of exploration, as outlined by the companies appears minimal. But it's like ignoring a request to survey the right-of-way for a new interstate highway. Undoubtedly, a few stakes in the ground are minimal impact—until you think about the future, that is. Both the state and federal permits will automatically allow development if exploration crews make substantial finds.

The draft EIS prompted considerable public reaction which was "predominantly against any leases," according to Gibson. Of 380 comments, only 1% of the respondents favor the leases, Gibson said.



Residents of the North Fork were especially poignant in their criticism. In fact, on a three-day tour of the area, I couldn't find a single person who favored *any* gas development. The residents, most of whom live there only seasonally, saw their serene summer estates threatened with the clamor of civilization—the very thing they came there to escape.

John and Karen Gray—part owners of the North Fork's only commercial facility, the Polebridge Store—helped collect 517 signatures on a petition. "Everyone who comes in here signs it," Karen noted.

Although united, North Fork dwellers are, nonetheless, *few*. So many of them forlornly view their future—especially when they see a federal administration pushing hard to get anything with BTUs out of the ground fast, regardless of the social or environmental cost.

"You can't stop it; just slow it down," John Gray remarked. "I suppose there are a couple of good years left."

"We're all against it," agrees long-time resident Mary McFarland. "Everyone who comes here wants it left the way it is. But I feel it doesn't make much difference what we say."

"We're up here because we've found something that we can't find anywhere else," echoes Barb Lawrence, still another North Fork inhabitant.

Understandably, the Department of Fish and Game sides with the North Fork residents in opposition to the gas development. Summarizing the department's feelings, Tom Hay, regional coordinator from Kalispell, wrote, "Naturally, we would prefer that the leases not be granted. Nearly everything associated with an operation of this kind will be to the detriment of the fish and wildlife resource. We are in the position where our values are always being traded to achieve someone else's goals. Soon our values will be gone. We can then join our sister states who have already had their wildlife resources traded for people and progress."

Most of the leases covered grizzly bear habitat, a source of recent controversy and a major concern of the department. Concerning the pending destruction of grizzly habitat, Hay criticized the common federal practice of the left hand not knowing what the right hand was doing. "This week [August 1, 1975] the Federal Government placed the grizzly bear in the threatened category. . ." Hay wrote. "Also, this week the Federal Government [the Forest Service] is making progress toward leasing 236,000 acres of grizzly bear habitat for oil or gas development. What a paradox! It is reminiscent of the Federal Government subsidizing the drainage of 40,000,000 acres of duck marsh in the Midwest and then wondering what happened to the waterfowl. It is also reminiscent of the Federal Government methodically eliminating the food supply of the black-footed ferret with a massive prairie dog poisoning campaign and then with crocodile tears placing the ferret on the endangered species list.

"Mark Ahner [planning forester for the Flathead County Areawide Planning Organization] in his assessment of the lease application makes the following statement: 'Dwindling wildland habitat through human encroachment and development would, I am certain, in the course of 25-40 years (life expectancy of the natural gas facilities), spell disaster for the grizzly bear in the two particular drainages.' We can see no reason to argue with that statement," Hay concluded.

Dr. Charles Jonkel of the University of Montana also recommended refusal, or at least delay, of the leases.

The draft EIS acknowledged adverse impact to threatened (grizzly bear) and endangered (peregrine falcon and wolf) species. However, in the next breath, the statement writers recommended going ahead regardless.

The North Fork houses perhaps the last northern Rocky Mountain wolves (*Canis lupis irremotus*). In 1975, Francis Singer, a biologist working at Glacier Park, confirmed presence of this remnant population, countering claims that this subspecies was extinct.

Singer calls this the "last breeding population of *irremotus*." He feels the struggling population

continued

Bulldozers "improving" the North Fork road by installing two larger bridges to accommodate logging truck traffic. F&G photo by Bill Schneider

might be slowly springing back after the use of 1080 and other predator poisons was suspended in the area. However, his optimism quickly disappears when someone mentions the gas or Cabin Creek development.

Beside rare wildlife, large populations of deer (both mule and whitetail), elk, moose and black bear frequent the North Fork. And other small game and nongame animals are common.

Sadly, America stands to lose all this—if energy companies fulfill their plans. Can anything be done to retain the North Fork's natural splendor? Perhaps. But it won't be easy.

Assuming the worst—Cabin Creek going ahead full steam, the federal government approving gas development and other pressures continuing unabated—what can we do to help keep the North Fork pure and the surrounding watershed filled with viable wildlife populations?

•*The Endangered Species Act of 1973.* This new law offers one small light at the end of the tunnel. The act forbids federal agencies from destroying or modifying "critical" habitat of threatened and endangered wildlife. Both the wolf and peregrine falcon are "endangered" and the grizzly is "threatened" under this law. And all three species stand to lose when progress comes to the North Fork.

The rub comes in defining "critical" habitat. Several federal and state agencies are cooperating in trying to interpret the act and define "critical" habitat. How long this will take is difficult to predict. But chances are bureaucrats will still be bickering over it when the federal government approves extensive gas development in the North and South forks of the Flathead.

This approval may set the stage for possible legal action under the Endangered Species Act. Plaintiffs may argue that all remaining habitat for a threatened or endangered species is "critical." Certainly, they will insist much of the two drainages is "critical" to the species.

The wolf seems to make the most concrete case. After all, this may be the *only* habitat for this subspecies *anywhere.* So it must be "critical."

•*Keep the road bad.* The road from Columbia Falls into the North Fork is bumpy and winding—*just the way it should be.* Pressure to improve and/or pave the road must be resisted. A good road would, of course, encourage recreational land sales and commercial development. Already, 3,936 acres of the 20,640, about one-fifth private land, have been cut up into small tract subdivisions. With an economic incentive like a 55-mile-per-hour road, promoters would have a heyday. Ron Prichard, district ranger at the Glacier View Ranger Station, says the FS plans to pave and widen the road from Columbia Falls to Camas Creek. Prichard said no plans exist to improve the road north of Camas Creek, except for two new bridges (Moose and Whale creeks) to accommodate logging truck traffic. However, he admitted these plans could change if pressure dictated it.

•*No power line.* Like the road, lack of electricity

has slowed development in the North Fork. But a power line would promote subdivision. So, it should be discouraged.

•*Zoning.* North Fork residents are starting to recognize the need for sound planning and zoning. Recently, they expressed desire for 80-acre minimum lot size. However, they refused to accept a "set back" provision, which keeps structures off the riverbank. They also wanted an "occasional sale" provision, which allows residents to subdivide one tract a year of any size.

True, North Fork residents are leaning in the right direction on planning and zoning. But they should go all the way if they expect to preserve the river and the way of life they now know. This would involve a strict "set back" provision, even tighter control of land sales and formal implementation of zoning.

•*Closer control of logging.* The FS has—and still is—heavily logging the North Fork. This has already reduced water quality in the river through siltation and had an impact on the area's wildlife.

•*Encourage an International Joint Commission (IJC) investigation.* The IJC, composed of officials from both Canada and the U.S., was formed in 1909 by the Boundary Waters Treaty to regulate such problems along the international boundary. The Department of State has taken a hard line on the Cabin Creek project, but the agency stopped short of recommending an immediate investigation.[Obviously, this study should occur before the North Fork is severely polluted. Because of lack of data and definitive plans, however, it will be inconvenient to embark on such an investigation immediately. Nonetheless, the Department of State should recommend IJC invlvement as soon as possible. Instead, however, the Department of State apparently prefers to wait until Rio Algom applies for a mining permit (thus making some necessary information available) or to work things out without any IJC involvement. Better yet, Rio Algom could submit preliminary environmental data (assuming it's available) to the Department of State to expedite the IJC investigation. It's difficult to overstate the significance of prompt IJC action.]

•*Stop the Garrison Diversion.* The Bureau of Reclamation's Garrison Diversion Project in North Dakota will pollute the Red and Souris rivers which flow *into* Canada. We can hardly ask Canadians to help protect fragile areas like the North Fork in the U.S. until we do the same for their waterways. The "do as we say, not as we do" philosophy won't hold much water in future negotiations. If we can in good faith stop degrading Canadian streams, Canadian citizens will undoubtedly be more sympathetic toward U.S. desires.

•*Support Wild and Scenic River designation.* The FS has already recommended the entire North Fork (south of Canada) be classified under the Wild and Scenic Rivers Act of 1968. The act contains a provision stipulating that waters flowing across the Canadian/U.S. border shall not be polluted on either side to the injury of health or property of the other side. Congressman Max Baucus (D-Mont.) has already introduced legislation to include the North Fork in the Wild and Scenic Rivers System, so throw your support behind Baucus' conscientious effort to help the North Fork.

•*Close part of the road.* Sound reactionary? It is. But assuming the mine and town go in at Cabin Creek as presently planned, closing the last mile or so of the road would be, as long-time North Fork resident, Frank Evans, put it, "a last straw" to prevent much of the impact from spilling over the border. Recreationists, residents, loggers and others would still have access to the area. But the closure might help prevent a paved thoroughfare from Fernie, B.C. to Columbia Falls, Mont.

Granted, the FS hasn't given the green light yet. Surely, Flathead National Forest officials could throw down the gauntlet and recommend refusal. In fact, the BLM could deny the leases, too. But most likely both agencies will favor the development. Both work under an administration that wants federal lands with energy resources developed.

Sadly, public servants who put the resource before administration mandates are few and far between for starters. And even those few are often harassed, transferred or suspended. If present administrators won't put federal policy first, their Washington bosses soon replace them with someone who will.

Probably the most vital move of all is changing life styles. If Americans switched from extravagant to basic living, perhaps "North Forks" everywhere would escape destructive development. This nation definitely needs a national policy that dictates energy and natural resource conservation, and individuals, businesses and industries must strictly adhere to it. It would mean some inconvenience, no doubt. But when the alternative involves losing places like the North Fork of the Flathead, it should be easier to accept. Without such a renaissance and other strong actions, we can say good-bye to the North Fork.

MINI-EDITORIAL

POINT—Most North Fork residents live there only seasonally. That means they also live seasonally somewhere else.

POINT—The root cause of the impending destruction of the North Fork is an increasing demand for energy which is, for the most part, created by extravagant life styles.

POINT—Maintaining more than one home is an energy extravagant activity, to say the least.

POINT—It is always easier to influence others to clean up their front yards, when the critics keep their own tidy.

U.S. Fish and Wildlife Service photos by Luther Goldman

our endangered species:

The Black-

THE black-footed ferret is one of the rarest and least understood mammals in North America. In fact, from the time of its discovery in 1851—by John James Audubon and John Bachman—until additional specimens were found in 1876, many scientists doubted the masked mammal's existence.

This secretive member of the weasel family (Mustelidae) continually defies biologists' efforts to census populations and uncover elements of its life history. Researchers haven't progressed very far in understanding the biology and habitat needs of the black-footed ferret (*Mustela nigripes*).

Most of the known information has come in the last 12 years. Studies conducted in Mellette County, South Dakota, by the South Dakota Cooperative Wildlife Research Unit provide the best information on ferret biology.

Plains Indians in Montana and elsewhere considered the ferret "medicine." Ferret skins were used in ceremonies and many superstitions surrounded the animals. (See the article on black-footed ferrets in the July/August 1971 *Montana Outdoors.*) Since Indians valued rare objects, use of the ferret as a ceremonial talisman suggests rarity, even in early days. Four stuffed and decorated ferret skins, formerly used by Crow Indians, are exhibited at the Department of Fish and Game's Chief Plenty Coups Museum at Pryor, Mont.

Even though the black-footed ferret has always been rare, early records suggest ferrets were somewhat more common than they have been in recent years. As an example, 18 ferrets were taken by government trappers in Montana between 1919-1928. Today, the black-footed ferret verges on extinction.

Without doubt, populations declined because suitable habitat declined. It is well known that the ferret depends on prairie dog colonies for its livelihood. Prairie dogs serve as the ferret's main food and their burrows provide ferrets with den sites. In one South Dakota study, examination of 56 ferret scats revealed prairie dog remains in 51 (91%). A 1954 summary of 42 acceptable ferret reports noted that of the 20 reports including habitat descriptions, 18 (90%) were described as "prairie dog town." Widespread elimination of prairie dogs through poisoning and land use changes severely depleted the ferrets' food supply. In the face of a sharply curtailed food supply and elimination of preferred denning sites, ferret populations had only one direction to go—*down.* Some ferrets might have been secondarily poisoned after eating poisoned prairie dogs.

Today, the ferret's existence in Montana is questionable. The last recorded specimen was a road kill near Alzada, Carter County, in November 1953. Since, only one observation could be regarded as authentic.

Since 1964, the black-footed ferret has been classified as "endangered" throughout its range by the U.S. Fish and Wildlife Service. And in Montana, the Fish and Game Commission has included it on the state's list of endangered species.

The black-footed ferret, about the size of a mink, weighs from 1½-3½ pounds and ranges from 18-24 inches long. It is brownish-yellow with a distinctive black

ooted Ferret

by Dennis Flath

mask across the eyes. The last third of the tail and its feet are also black.

The nocturnal and secretive habits of black-footed ferrets frustrate biologists trying to study them. Although ferrets have been observed in daytime, most activity occurs in darkness. Summer activity peaks occur from dusk to midnight and again from 4 a.m. to midmorning. Since ferrets spend so much time underground, many facets of their life history are completely unknown.

When ferrets breed is still a mystery, but observations of litters suggest that from three to five young are born in May or early June. The young have been seen only with the female, so apparently the male does not participate in rearing them.

Young ferrets rarely venture above ground until July, when they are about one-half to two-thirds adult size. The female thoroughly checks the area, then brings the young out of the den only if she is convinced the coast is clear. Often, young ferrets don't want to leave the den's security so the female grasps them by the nape of the neck and pulls them out. As the young ferrets grow older and bolder, they follow their mother's coaxing more readily.

During July, the female leads the litter on nighttime excursions around the dog town. She often places the young in another burrow while she goes off to obtain a fresh prairie dog for supper. When a prairie dog is killed, the female may take the dog to the burrow sheltering the young, or she might bring the young to the burrow containing the dead prairie dog.

As the young ferrets grow, the female places each in a separate burrow. By August, they begin hunting for themselves. During late August or early September, they reach adult size and begin to look for homes of their own. Dispersing ferrets have been spotted some distance from dog towns. In fact, 43% of all dead ferrets found outside dog towns have been found during the fall dispersal.

It is impossible to tell if a ferret definitely inhabits a prairie dog town without actually seeing it. But it often leaves signs which strongly indicate its presence. Perhaps the most reliable sign results from the ferret's digging habits. As a ferret digs, modifying a prairie dog burrow for its own use, it often forms a trench-like structure in the mound. The trench is formed by the ferret's body as it backs out of the burrow, pulling loose earth along with the front legs. These trenches are usually three to four inches wide and may be eleven feet long. The trench gradually takes shape as the ferret makes repeated trips with loads of earth held against its chest.

Ferret digging may not always create a trench; often the ferret simply scatters the soil beyond the prairie dog mound. In contrast, prairie dogs continually try to build up the mound. Therefore, fresh dirt scattered beyond the mound strongly suggests ferret activity. Prairie dogs often destroy evidence of ferret digging by rearranging the earth on the mounds. This activity is probably the prairie dog's first order of business in the day, so checks for ferret digging must be conducted early in the morning.

Prairie dogs usually plug bur-

continued

Ferret trench. photo by Con Hillman

rows occupied by ferrets or recently used by them. Although dogs will attempt to "bury" other predators in this way, several plugged burrows in a particular area of a town suggest the possible presence of a ferret. A ferret can easily leave such an earthen prison. When it does, it leaves an opening about the size of a silver dollar.

Ferret tracks and droppings resemble the mink's so closely that it is nearly impossible to tell them apart. And, mink occasionally visit dog towns. Furthermore, absence of ferret sign does not mean that ferrets are *not* present. In South Dakota, ferrets have been seen on dog towns displaying no evidence of ferret activity.

Authorities agree that ferret management is directly tied to prairie dog management. In the past, the only management technique applied to prairie dogs on a large scale was poisoning. The prairie dog was eliminated from large areas, and the ferret went also. With the 1972 ban on use of 1080 on public lands, the picture changed. Many dog towns on public lands are safe from poisoning, at least for now. However, prairie dogs are still poisoned on private land.

During a black-footed ferret and prairie dog workshop at Brookings, S.D. in 1973, the problem of "managing" prairie dog towns (ferret habitat) was discussed. About 81% of the Mellette County ranchers tolerate *some* prairie dogs on their land. Problems arise, however, when towns grow too large and the rancher feels a need to "do something about it." That "something" usually means poison. On the other hand, dog towns which are regularly shot at are usually left unpoisoned. It is clear that sport hunting of prairie dogs provides long-term benefits for ferrets by reducing the "need" (real or imagined) for poisoning prairie dogs.

In summing up the workshop, Ray Linder of the South Dakota Cooperative Wildlife Research Unit stated that shooting prairie dogs should be encouraged. He explained that many South Dakota dog towns occur along roads because ranchers tolerate the towns near the roads so they can go out and shoot, and also ask their friends to join them. He further stated that inaccessible towns were long ago eliminated, and that many towns "would be a thing of the past if it weren't for shooting—I am personally convinced."

Not only does sport shooting of prairie dogs provide a specific form of control, it also provides recreation. Sportsmen can participate in off-season hunting activity and sharpen their shooting skills at the same time.

Accidental killing of a ferret by a varmint hunter is very unlikely. Recall that ferrets are night animals (nocturnal) while prairie dogs are day animals (diurnal). Furthermore, *all* animal populations are capable of producing a biological surplus. This surplus allows a species to expand its range or increase its numbers when additional habitat becomes available. Even if an occasional ferret were illegally lost to shooting, its loss would be more than compensated for by heading off poisoning campaigns which would otherwise eliminate both ferret and prairie dog.

Prairie dogs on grazing land would certainly be more tenable if a constructive use for harvested prairie dogs could be developed. If the "sod poodles" were valued as pet food or for laboratory research, it would mean more prairie dog towns and, consequently, more black-footed ferret habitat.

Biologists don't know how far a dispersing ferret travels in search of a new home. But if the distance between dog towns is great, the dispersing ferret runs a greater risk of being eaten by an owl, badger or other predator, being run over, drowned, etc. than if dog towns were fairly close to one another. Most ferrets were observed by biologists in South Dakota on dog towns of under 100 acres. Furthermore, ferrets sometimes live in dog towns of under 10 acres. Thus, a "scatter pattern" of small dog towns would provide ferrets with optimum opportunities to disperse and establish successful populations elsewhere.

This is a clear-cut case of the necessity of managing a species (ferret) through managing the habitat (dog towns) on which it depends. This concept is not new. It has been tried and tested on many species of Montana wildlife for decades. Only sound management practices can save endangered species such as the black-footed ferret from extinction.

dear F&G

Cooperation Yields Adequate Access

Each year during hunting season, the offices of the Bureau of Land Management (BLM) become very popular places for hunters to come and complain about being denied access to their public lands. Often, the hunter is wrong in assuming he was in fact traveling on a public road or that he was at the time of encounter on public lands. In other cases, the hunter is in fact being denied access to public roads and lands. In these cases, the situation is corrected as soon as possible. If the hunter is advised there is no legal access to the public lands and that the private landowner has a right to lock his gate, the response is often, "Why don't you furnish access to the public lands? We have a right to use the public lands."

BLM often finds it is playing the role of arbitrator. Both the landowner and hunter have undisputable rights. The answer seems to be in planning for key access routes where the public can do the least damage to the land and its resources and yet provide adequate access for their orderly use.

BLM's planning for access considers the systems of county, state and other federal roads and rights-of-way. The diversity of road ownership makes it important that all parties work closely together. This has not always been the case. One such incident occurred recently in Madison County. A section of the Sage Creek Road between the head of Stone Creek and the Conley Ranch was arbitrarily closed by the commissioners on petition of Fred W. and Sue R. Conley. The reason given for closure was "that the road is no longer used for public travel; the maintenance of the road is a waste and unnecessary expenditure of public funds, and an alternate county road, known as Dillon by way of Sweetwater, is used by the public and the need for said road no longer exists."

This action by the Madison County Court means the Stone Creek Road now "dead ends" at a fence on the divide between Sage and Stone creeks and that the only access to a large block of public land is by foot from the Sweetwater Road. The county commissioners' action was taken over the protest of the BLM. Since the closure, BLM has received letters of protest from the State of Montana, Department of Fish and Game, Beaverhead Sportsmen's Association and Skyline Sportsmen's Association. The protests now do little good in reversing the county commissioners' decision. However, the county commissioners did not vacate the right-of-way. A stock driveway which is "public" still exists. Their action simply purged them of any maintenance responsibilities. To return the road to its former status, interested parties would have to petition for reinstatement. The other alternative would be for BLM to condemn for a right-of-way at considerable public expense.

When asked again, "Why don't you furnish access to our public lands," it would be easy to say, "Go talk to the county commissioners." That would serve only to shift the blame. What is needed is adequate access and the only way to obtain that is by all landowners and administrators working together as a team and not as antagonists.—*Jack A. McIntosh, Dillon district manager, Bureau of Land Management; Dillon, Mont.*

HIGHWAY BORDERS COULD PROVIDE PHEASANT COVER

I have hunted big game, upland birds, pheasants and waterfowl in Montana since 1937. It is my observation that the deer, elk and antelope are holding their own and that management of these species is being well handled. Duck hunting in this area was practically nonexistent this fall due to the drought.

Pheasant hunting in this area is a somewhat different matter. In our area, principally Pondera County, the pheasant population has steadily declined over the past several years. As far as I know, there have been very few birds planted in that county and there is no question that heavy inroads have been made into the population by predators, improved farming practices, heavy grazing by livestock and hunting pressure. I am sure your department is aware of this. I ask, what steps are being taken or planned to bring back a reasonable pheasant population?

When my sons were young boys, I could take them out and without too much trouble, we could get our bag limit. It is an experience which I am sure they have never forgotten and each fall they looked forward to it. Now, if I would take my grandsons out pheasant hunting, I would be lucky to find a track in fresh snow, let alone see a live bird. Areas around Valier and between Valier and Conrad, which used to be the home for thousands of birds, now have very few or none.

I could not help but think as I was driving along the highway to Great Falls early the other morning and failing to see a solitary bird, that lack of cover must be one of the principal reasons for the population decline. With that in mind, why could not the highway—both along Interstate 15 and secondary roads and county highways—be left with a heavier grass cover?

It seems a waste of money to mow the wide spaces bordering Interstate 15 to a hayfield condition when at least part of the right-of-way could be left to grow into grass, clover, weeds, etc. True, such cover would be close to fast-moving motor vehicles, but at least it would provide some cover for hatching, protection against predators and also winter cover. I know the edges of the highways are mowed so snow does not drift in the winter, but this is no reason for mowing everything to the right-of-way edge. I believe that if the shoulders of the highway and the sloping section into the barrow pit were mowed, this would be sufficient for snow purposes. The rest of it would make excellent cover. This, of course, would have to be taken up with the highway maintenance department but I would think it could be worked out. By no means do I think it is an answer to the problem, but it is a start in the right direction.

I love to hunt and I keep a good gun and a hunting dog, but the way it is now, I may as well sell the guns and let the dog live out its days as a house pet.

Perhaps I have not expressed myself very well, but I would gamble that 95 per cent of the hunters feel just about the way I do. Pheasant hunting is a thing of the past in this area and no one seems to be doing anything about it.—*Wilbur P. Werner; Cut Bank, Mont.*

•*To the contrary, Mr. Werner, you express yourself very well and suggest a course of action which is under consideration by the Montana Department of Highways.*

The importance of roadside cover, particularly for nesting pheasants, has been pointed out by studies in North Dakota and Nebraska. A study of one area, where roadsides comprised only 3% of the total study area, revealed that 25% of the pheasants nested in these uncut roadsides. Standing dead growth from the previous year was the preferred nesting habitat. These studies led to changes in cutting practices in both of the above-mentioned states.

The Environmental Unit of the Highway Department recently made three proposals for cutting of vegetation and

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haying on highway rights-of-way:

(1) Delay cutting until July 15 on all state areas.

(2) Cut only the portion of the roadway necessary for highway safety, generally to the bottom of the ditch on the side nearest the highway. Do not allow any haying on rights-of-way specifically designated by the Department of Fish and Game.

(3) Eliminate haying within ¼ mile of all streams and rivers.

These proposals are subject to approval by the Maintenance Division of the Highway Department; it has taken no action at this writing. Sportsmen and others concerned are urged to write letters to the Highway Department supporting these proposals.

While regulation of cutting and haying procedures will result in more pheasants, it alone will not solve the problem of decreasing pheasant populations. In what must be our most often repeated statement, the problem is loss of habitat.

The past several decades have seen a change in land use practices, not only in Pondera County but in many other parts of Montana. Because of increased demands for food and fiber, agriculture has intensified. This has changed habitat from areas with a good deal of edge, weed patches and grain crops to lands which are generally used for pasture, at the expense of most vegetation. The department feels that it would be imprudent to place pheasants in heavily grazed areas that afford little protection and have scarce breeding cover.—Ed.

YELLOWSTONE ELK: STAND BACK AND LEARN

In "What About This Anti-Hunting Thing?" in your Sept./Oct. 1975 magazine, John Madson writes: "Anti-hunters, generally, are operating on pure, unbridled emotion. And to a great degree, so are the hunters." "Yellowstone Elk: Curse or Blessing?" in the same issue is an excellent example of the latter statement.

The two reasons given for changing policy to allow Yellowstone elk hunting are: (1) Elk cause habitat change (labeled "destruction" in the article) and (2) elk suffer "slow agonizing starvation" if not hunted. Shades of the American Society for the Prevention of Cruelty to Animals.

What are the factors involved if we assume that starvation is little different than a gut wound, and that in any case, the elk's life is a resource and not sacred as human life is?

The first factor that comes to mind is that if all elk are controlled by bullets rather than starvation, elk 10,000 years from now will not be very well adapted to avoiding starvation—by storing fat, finding scarce food, etc. Not only will the elk be a less noble creature depending on man for existence from year to year, but the author's descendants will never be able to hunt a wild elk.

A second factor is that some day chance may bring the right things together—including weak, starving elk—so that cougars or wolves may again become abundant. I assume good hunters would welcome the chance to compete for their game with real hunters of the wild.

A third factor concerns the comments, ". . .the greatest danger to the elk's welfare was elk." "Elk did not control their own population size. . ." ". . .necessity to regulate the elk. . . ." Ah yes, how did the trees ever get along without foresters and the elk without wildlife managers? Surely, over the elk's long history, winter ranges must have been changed by floods, fires, glaciers, heavy snows—and yes, even elk.

Yellowstone National Park is almost synonymous with change: mountains growing, trees dying as hot water spills over them, brush growing on fire scars and trees growing in brush. These changes did not destroy the elk, they *made* the elk. Why do we need to call these changes destructive? The elk has survived thousands of years of its own "overgrazing" just as aspens have survived thousands of years of their own overshading.

Perhaps in a few places on earth, we wildlife managers should stand back with our answers and learn from the process that gave us wildlife. In so doing our children's children will also have *wild* life.—*Brian Heath; New Milford, Conn.*

SHARES CONCERN

I'd like to let you know that I greatly enjoy your magazine and share many of the concerns expressed in it about the directions in which Montana seems to be heading. I hope that you continue to point out the things that are happening and potential dangers in the state that I hope to once again make my home. Concerned citizens must be informed of a situation before they can take steps to try and counter it.—*James Harper; Ann Arbor, Mich.*

SNAKEBITE ARTICLE RAISES RATTLES

About the last thing I remember last night was my wife telling me to be sure to read the snakebite article in the July/August 1975 *Montana Outdoors*. So, this morning, for breakfast, I read it—and I'm a bit disappointed. Here's why.

First, much of the truth about snakebite in the article is not really very useful: "Rattlesnakes account for 75-85% of all human deaths from snakebites and the bulk of these fatalities includes persons under 15 and those 50 or older." So? "Rattlesnakes do most of their moving around at night. Given the chance they'll usually crawl away or rattle when alarmed. . . ." At night? Is this part of the article about night only?

Second, some of the material in the article, especially that from McCollough and Gennaro, is almost unintelligible because of the jargon. It is really unfortunate that editorial assistance wasn't provided to those of us who do not know what "occlusion" means or do not understand the sentence, ". . .therapy of

TOO BAD ABOUT MELITA

I read the article on Melita Island in the Nov./Dec. 1975 *Montana Outdoors*. I feel as you do, that it is too bad the island was sold for private development. As a Mason, I feel we were at fault and possibly could have done more to stop this detrimental sale. I believe that if the state, Masons, Boy Scouts and other public-spirited groups had gotten together, Melita could have been saved.

Regarding pollution from Melita Island if it is developed for homes, I venture that the State Department of Health and Environmental Sciences will be pretty weak. You can't expect one lone sanitarian to buck the power of big money. I am not criticizing our local sanitarian, but it just isn't in the cards. I know from past experience that the Health Department has been very weak in dealing with water pollution problems, such as those on the Milk River. The state Health Department did not back up the local sanitarian.

Should the state Health Department really get tough about Melita—then might there just be a chance that the state could buy it? I am sure lots of individuals would help.

Sale of Melita was finalized at Glasgow by a 42-24 vote. A prominent Knights Templar I talked to seemed very evasive about the whole deal. I am glad you wrote the article because maybe more people will have twinges of conscience.—*Herbert DeVries; Polson, Mont.*

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this type—although radical—could prevent a fatality or more extensive damage to the limb. . . ." Should I use such therapy or not?

Third, and most important, the article says explicitly if the victim is hours from medical attention, "use the antivenin as soon as possible." And yet, in the box on page 48, the only part of the article that will be read by many, there is no mention of the use of antivenin. That strikes me as a bad omission. Any by the way, what is a "lymph constriction band?"

So, how about putting in another box on snakebite, this time including the most important information and in language that any of your readers can easily understand? I also suggest putting in a map of the state showing where any concentrations of rattlers are known to be. Do you know anything about such a concentration in the Bear Trap area on the Madison River north of Ennis?—*Robert A. Sencer; Bozeman, Mont.*

BEWARE EASY SOLUTIONS

I recently read an interesting and informative article regarding prosperity and employment schemes which I would like to pass on to the readers of *Montana Outdoors*.

It seems that back in the 1960s, Detroit was plagued by unemployment. Developers concocted a typical scheme to provide 50,000 new jobs. Several hundred thousand dollars went into the panacea to create all sorts of jobs. The entire undertaking was self-defeating. To the bewilderment of all, unemployment greatly

increased because after the 50,000 new jobs were filled, almost twice as many unemployed persons got word of the venture via the employment grapevine and flocked after the jobs.

Montana should beware. Colstrip may provide jobs, but the state will likely wind up with droves of job seekers, far in excess of the number of jobs promised by Montana Power.—*Roy Henn; Babb, Mont.*

ON HUNTER / LANDOWNER RELATIONS

One of my concerns upon returning to Montana has been the quality of upland bird and waterfowl hunting in the state. Recent hunts indicate that game is more scarce, bag limits are lower and access is more difficult. This is explained by emphasizing that there has been a deterioration in game habitat and hunter/landowner relations.

One Department of Fish and Game solution has been to purchase land and, as the Sept./Oct. 1975 *Montana Outdoors* indicates, the wildlife conservation easement. While these are excellent programs and ought to be intensively pursued, they appear to be only a partial solution to our problems. Already fish and game land acquisitions are a source of concern in many local areas of Montana.

Most bird hunting occurs in areas with considerable private land ownership. There are innumerable opportunities for habitat improvement in these areas if there were proper incentives. Section lines, water runs and coulees could be developed to provide better upland game habitat in grain growing areas. Sloughs and stock dams could provide improved waterfowl habitat. What active programs does the department have for wildlife habitat improvement on privately owned and operated lands?

Hunting access to privately owned land is a complex problem. One important aspect is destruction of the landowner's real property and domestic animals. Does the department have any programs to indemnify landowners for bona fide hunter-caused property damage?

Finally, does the department have any program linking habitat improvement and compensation to landowners for hunter-caused damage to hunter access to totally privately owned and operated lands?—*Norman J. Larson; Helena, Mont.*

•*The department provides technical assistance and at times, funds, to increase wildlife and improve habitat on private lands. Our program is not "active" in the sense that private landowners must come to us when they desire assistance.*

Since almost all of the funding for our department comes from sportsmen, we make an effort to get private landowners to allow access on lands where we have provided assistance. When the assistance is in the form of professional advice and planning, we do not insist that public access be allowed. If department money is involved, however, public access is mandatory.

Compensation to landowners for hunter-caused damage exceeds both our authority and capability. Just as the Department of Motor Vehicles can't be totally responsible for all drivers they license, neither can the Department of Fish and Game account for all of the actions of hunters. While we do enforce all fish and game regulations, we have no authority to deal with property damage which is covered by state and public law.—Ed.

EQUAL OPPORTUNITY

In case you were wondering, the Montana Department of Fish and Game is an equal opportunity employer. This means it doesn't matter if you're female, male, black, white, Oriental, Lutheran or Methodist—you'll be considered for employment on the basis of your qualifications and skills.

Also, equal opportunity is insured in use of any of the department's facilities—fishing access areas, for example. If you note a discrepancy, call the citizens' advocate, Kathy McGowan, at the toll-free number, 1-800-332-2272.

MORE ABOUT THIS ANTI-HUNTING THING

I was intrigued by the anti-hunting philosophy explained in John Madson's article, "What About This Anti-Hunting Thing?" in your Sept./Oct. 1975 issue.

What I wonder is: Why don't these people put their money where their mouths are? If killing a wild animal robs it of its right to life, or if killing it is too painful, why not carry the same belief over to domestic animals? Hasn't a beef steer the same right to life as an elk? Hasn't a tame turkey the same right to life as a wild turkey? Then why does one of these anti-hunting advocates order steak or prime rib or dine on turkey at Thanksgiving? Why doesn't he put his money where his mouth is and become a vegetarian?

The same philosophy carries in the other direction, too. If a conservationist opposes cutting trees in the forest, how come he lives in a house made of wood and has wooden furniture? If he opposes using fossil fuel, or rather if he opposes others preparing fossil fuel for his use, why doesn't he put his money where his mouth is and quit using gasoline and fuel oil, or disconnect his house and factory from the power line where the electricity is generated by strip mined coal?

If he accepts these comforts and makes use of them, then his opposition to tree cutting, coal mining and the like can hardly be called sincere.—*Robert E. Miller; Helena, Mont.*

* * * *

In your Sept./Oct. 1975 issue, John Madson wrote an article titled, "What About This Anti-Hunting Thing?" I would like to respond to that article from the anti-hunting viewpoint.

I would like to quote several parts of his article and point out certain aspects of the other viewpoint.

He states that the largely urban population of the U.S. is responsible for the anti-hunting movement. While it is probably true that the majority of anti-hunters do live in urban areas, not all do. Anti-hunters are found in all walks of life, including wildlife biologists.

He said ". . .opposition to all hunting usually stems from critics for whom we have no real respect—critics who not only lack credentials. . . ." If having credentials means having a degree in wildlife

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biology or management then it is true that most anti-hunters don't have them. Some do. But most hunters don't either.

He also says, ". . .the greatest gap between hunter and anti-hunter exists at the lowest levels of outdoor experience and knowledge. . . ." Hunters don't have a monopoly on outdoor skills and abilities. You can enjoy the outdoors without a gun in your hand.

Madson defends the so-called sport of hunting by saying that anyone who is opposed to it doesn't know about the outdoors or wildlife and by making snide remarks like, "And when such criticism comes from someone like Cleveland Amory or Lauren Bacall—who wouldn't know the difference between a Cooper's hawk and a Fungo bat. . . ." I am sure both of them can tell the difference, but whether or not they can makes no difference. Many duck hunters can't tell the difference between different species of ducks.

He quotes an old Korean saying, "Pain makes men think, thought makes men wise, and wisdom makes life endurable." Does this mean that the pain you inflict upon animals makes your life endurable?

He states, "The best answer that I can see is mandatory hunter-safety training and certification of all new hunters" and, "It is important to recognize that it is not 'hunting per se' which is on trial—it is the 'conduct of the individual hunter' which is at the heart of the issue." Well he is wrong—dead wrong. It is hunting per se which is on trial. Admittedly a "slob" hunter is worse than another hunter but that doesn't mean a hunter who obeys all laws is justified in what he does.

Madson said, ". . .there has been far more good stuff written to support hunting than to condemn it. There's good reason for that—the people who write bitterly about hunting simply don't know enough about hunting to do a real job of it." Whether you believe that or not is a matter of opinion. But just look at the massive financial support for articles that support hunting—such as from the National Rifle Association, the corporations that manufacture guns and ammunition (one of which employs John Madson) and publications such as *Montana Outdoors*. Just try to find financial support like that for anti-hunting articles or research. And since Madson mentioned several books to support his viewpoint, I suggest "Man Kind? Our Incredible War On Wildlife" by Cleveland Amory.

Finally I would like to convey my opinion of hunting by quoting Joseph Wood Krutch who said, "When a man wantonly destroys one of the works of man we call him a vandal. When he wantonly destroys one of the works of God we call him a sportsman."—*Jim Banks, senior, wildlife biology, University of Montana; Missoula, Mont.*

contributors

Trapping raises many questions. Should leg-hold traps be banned? Are some traps more humane than others? Should trapping be allowed at all? Each year, more and more trapping licenses are sold in Montana. Also, the number of persons opposed to trapping wild animals is growing. So, the controversy is bound to intensify. In his article, "Trapping: Humane Alternatives," Harley Yeager looks at these and other questions. The department's information officer in Great Falls, Yeager had some experience trapping on a ranch in his high school days. He holds a B.S. degree in fish and wildlife management from Montana State University in Bozeman and has done graduate work in fish and wildlife management, rare and endangered wildlife and environmental policy and administration. He previously served as information officer in Billings and Glasgow. Turn to his article on page 15.

Chrome, copper, nickel, platinum, palladium, silver, gold, iron—the Stillwater Complex is a veritable storehouse for these and other valuable minerals. Companies have mined the area before, but mostly abandoned efforts after a few years because of economic pressures. But mining technology has improved. This time, the "boom" may be heard all across the state. And the area's trout fishery, elk, bighorn sheep and other game and nongame species will suffer effects of the "bust." Ron Stoneberg examines the situation in his article, "The Stillwater Complex—Booming Again." A department fish and wildlife biologist headquartered at Nye, Stoneberg knows and appreciates the area better than most. He received his B.S. in zoology from the University of British Columbia and an M.S. in wildlife management from the University of Montana, Missoula. His article on page 19 leads off this issue's eight-page treatment of the problems the Stillwater faces.

CBS put it on the line when it aired, "The Guns of Autumn" and its sequel, "Echoes of the Guns of Autumn." Bill Pryor puts it on the line when he develops the background of the who, what, where, when, why and how of the two programs. After reading his article on page 30, there's no doubt you'll agree that CBS did a slick job of moving its message. Pryor's article serves as a warning to those who are complacent about threats to the sport of hunting. "Hunters still have time to fight back," Pryor writes, "but they better hurry." Before taking over as the department's information officer in Billings, Pryor worked with the Illinois Department of Conservation and the National Rifle Association. He earned a B.A. in philosophy from the University of Illinois and an M.S. in zoology from Western Illinois University.

As his first *Montana Outdoors* assignment, Hank Fischer takes a look at Red Rock Lakes National Wildlife Refuge. Housed in the remote Centennial Valley of south central Montana, the refuge was the site of the trumpeter swan's comeback. But the area's success story might have a few holes in it. Silt is rapidly filling the area's lakes and streams. Ownership of the watershed is piecemeal, making control and regulation difficult. Cattle graze the refuge, but it's questionable how many the refuge will ideally support. So, the web of interrelated problems is complex and difficult to solve. Fischer joined MO in late August as our first intern. A graduate student at the University of Montana, he is working toward an M.A. in environmental studies. His undergraduate program in general studies at Ohio University emphasized English. Turn to page 35 for his article.

Most fishermen have heard about the super trout fishing in western Montana. Not as many have heard about the challenging sauger fishery in eastern Montana. The sauger goes for a variety of baits and lures, fights hard and provides tasty table fare. Mike Haddix' article on "Sauger" begins on page 42. A fish and wildlife biologist working on the lower Yellowstone River fisheries study, Haddix holds a B.A. in biology and an M.A. in aquatic biology, both from the University of Nebraska.

Have you ever attended a meeting and seen an entertaining film on hunter safety, winter range for wildlife or scenic beauty in the Flathead? Perhaps you noticed a credit line at the end: "Produced in the interest of wise resource management by the sportsmen of Montana." Or you might have seen short announcements on television urging hunters to respect the land on which they hunt. Or you perhaps have heard short "blurbs" on your radio emphasizing that it's important to get in shape before setting out for the first spring hike. All of these movies and announcements originate from the department's Audio-Visual Center. Paul Bushaw tells you about the operation in his article on page 44. You've probably heard his voice many times, if not in department announcements, then perhaps on KCAP-Radio in Helena where he worked before joining the department in 1974. His previous radio experience included a stint with WRJC in Mauston, Wis.

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TRAPPING: humane alternatives

by Harley Yeager
F&G photo by Paul Bushaw

"I will fight the vicious steel jaw leg-hold trap for the rest of my life! I am an animal lover and defender and my first and foremost concern is to end any and all suffering animals go through. Unfortunately, many 'humane' and 'conservation' groups started out with this objective but have strayed away and 'Uncle Tommed' their animal brothers and sisters!" So wrote Karen Beierle of Billings in her Feb. 15, 1974 letter to the Montana Department of Fish and Game.

Ms. Beierle's comments are typical of ever-increasing numbers of persons opposing trapping of wild animals across our country. Because of their efforts, at least two states—Florida and Hawaii—prohibit leg-hold traps. Similar bills are pending before several other state legislatures. Legislation banning leg-hold traps on federal lands was introduced before the 92nd Congress in 1972 and during subsequent years, but so far has not passed.

TRAPPING INTEREST INCREASES

During 1971-72, only 861 trapping licenses were sold in Montana. However, by 1974-75, this figure jumped to 1,868. Increasing prices for predator fur—good quality coyote and fox pelts doubled from $20 to $40—stimulated high interest in trapping. But the number

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of licenses sold excludes trappers who trap only predators, because no license is required according to Montana law.

Because of high fur prices and no license requirement for trapping predators, many persons with no trapping experience or knowledge of animal habits tried their hands at making a fast buck. Very few were successful. While conscientious trappers checked traps every 24 hours or at the most, every 48 hours, other trappers let their lines go for several days. And not all unchecked traps were empty.

Most predators trapped in the Treasure State fall victim to leg-hold traps of various types and sizes. Montana has few restrictions on use of traps for taking predators or fur-bearing animals. (See general trapping rules on page 17.)

Because of this situation, State Rep. Polly Holmes (D-Billings) introduced H.B. 281 before the 1975 Montana Legislature. As proposed, this bill required (1) the Department of Fish and Game to offer approved courses in humane trapping, (2) identification of traps designed for the capture of animals, (3) traps designed as humanely as possible and (4) provided for specifications to modify certain traps. The bill received stiff opposition and was tabled by the House Fish and Game Committee.

Although a similar bill cannot be introduced until the 1977 session, the question of more humane trapping practices is worthy of immediate consideration.

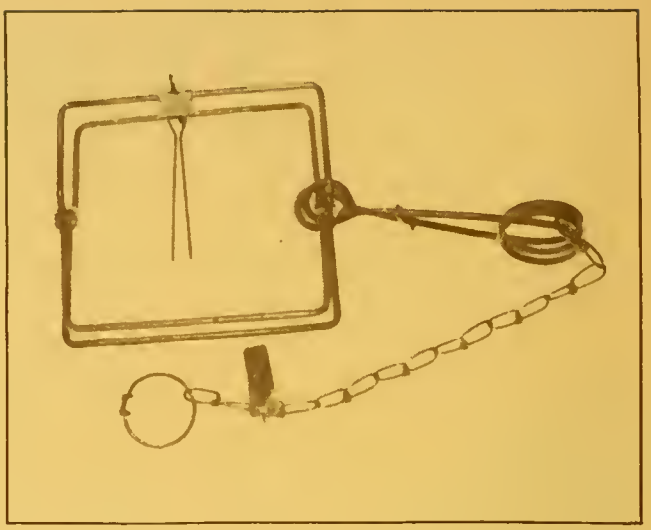
TRAP TYPES

Two basic types of traps are used today—those that kill and those that restrain an animal. Killer types include snares and the Conibear trap. Snares are primarily a holdover from the past but are legal for taking predators, furbearers and unprotected nongame animals (rabbits, rodents, etc.) in Montana. Although used infrequently, snares are considered more humane than steel leg-hold traps.

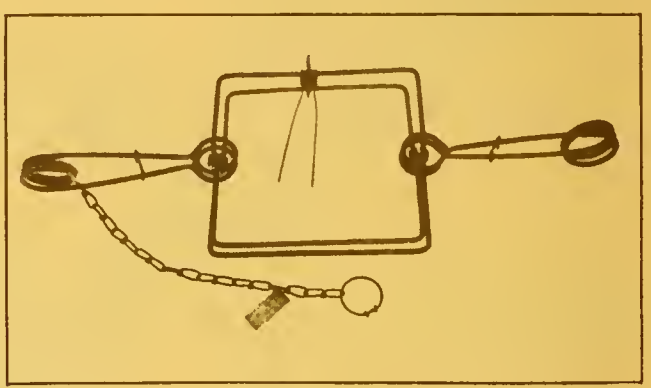
The Conibear trap consists of two square steel frames connected by a spring. As an animal walks into the trap, a trigger releases, causing the frames to snap on the animal's neck and back, killing it.

According to the 1971 New Brunswick Natural Resources "Guide to Humane Trapping Methods," the Conibear trap is not only more humane than leg-hold traps, but more effective. The guide points out that Conibear traps can usually be set more easily, fewer animals escape and fur damage seldom occurs. According to the guide, the few dollars additional cost of the Conibear can be made up in one trap night.

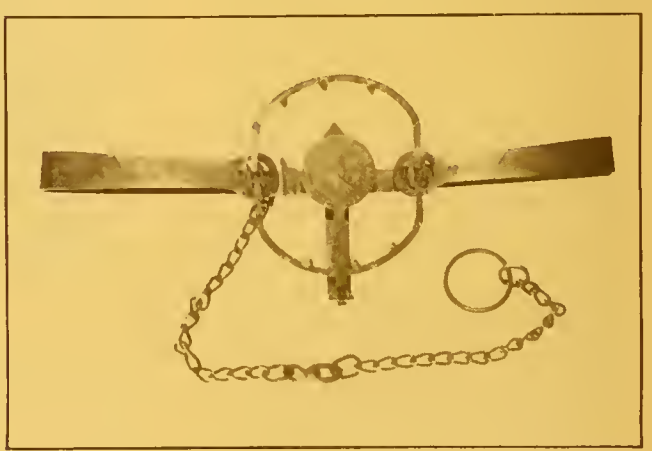
Conversely, according to "Trapping and Wildlife Management," published in 1975 by Woodstream Corp., a trap manufacturer, the Conibear trap is ineffective for long-legged animals such as coyote, fox and bobcat. But, the bulletin states Conibears work well for small animals such as muskrat, mink, skunk and weasel.



The Victor Conibear 110, used to trap small animals such as mink, skunk and weasels, is highly acclaimed as more humane than the conventional, leg-hold devices. F&G photos by Tom Warren



A larger Conibear trap for larger animals such as the beaver and otter.



Conibear traps seem more humane and more effective than the leg-hold trap shown here.

Many trappers agree that the coyote, in particular, is too smart to be caught in a Conibear, but most agree that Conibears are very humane, despite their limitations. In fact, the Victor Conibear 110 trap received a certificate of merit from the American Humane Association.

The second type of trap is the restraining or live trap, including both cage and leg-hold traps. (Snares

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may be included in this category if they are set up to hold rather than to kill.)

Cage traps consist of steel wire boxes of various sizes, either rigid or folding, with an entrance door. Some contain a sliding rear door for easy animal transfer. Skunks, raccoons, cats, squirrels and other less wary urban animals are most often caught. Even though cage traps are among the more humane traps, they prove ineffective in trapping coyote, fox, bobcat or lynx.

The most widely used live trap today is the leg-hold. These traps catch the most wary long-legged predators as well as short-legged furbearers. Unlike the Conibear, a leg-hold trap usually doesn't kill its prey. However, properly set in water, leg-hold traps quickly drown the caught animals. Controversy has swirled over use of leg-hold traps for years. As stated by a Florida critic, "They are the most diabolical instrument of torture ever devised by one species for use against another."

This strong reaction probably stems from knowledge that some animals are trapped for long periods before they are killed, even though trappers are asked to check their traps regularly. But enforcing regulations on the frequency of trap checks is nearly impossible. Violent reactions to leg-hold traps are also precipitated by the fact that an animal may lose a toe or foot in the trap while escaping.

While such incidents occur, according to the Woodstream Corp. bulletin, they are infrequent and usually the result of poor trapping techniques. The bulletin cites a New York study in which 150 foxes were trapped in leg-hold traps, marked and released with no permanent debilitating injury.

On the plus side, each year leg-hold traps catch wild animals with fur worth hundreds of million dollars. The wild fur industry provides many jobs. And well-managed trap lines are a useful tool for removing the overabundance of muskrat, beaver, etc. produced by nature each year. Even so, to some people the obvious solution to the trapping dilemma is to quit using natural furs and use synthetics. However, synthetic furs are made from petroleum derivatives—one of our country's nonrenewable resources. Everybody knows about escalating gasoline prices and the availability of oil products. So, why not use fur-bearing wildlife, a renewable natural resource, trapping proponents ask?

Leg-hold traps are also defended by those who use them to catch depredating animals. But they are only partially effective in controlling stock-killing predators like the coyote.

TRAP OF THE FUTURE

A modified leg-hold trap may well be the trap of the future. One such trap is the off-set jaw trap, so named because of a space left between the jaws when the trap closes. This modification minimizes damage to the animal's leg.

The off-set jaw trap can be fitted with a "trigger jack" to increase the pressure required to trigger the trap and reduce the chance of capturing animals lighter than the target animals.

The U.S. Fish and Wildlife Service (FWS) improved the humaneness of the off-set trap by using tranquilizer tabs. During the trapped animal's first efforts to break free, the tab is usually chewed and the drug ingested. This innovation reduces injuries to the feet of the trapped animals, according to research conducted by the FWS. Federal personnel are also testing other tranquilizers for possible use in the off-set jaw trap. Also, most American manufacturers are attempting to make leg-hold traps more humane by eliminating steel teeth on trap jaws.

Padded leg-hold trap jaws provide yet another humane modification. Developed by Dr. Harry and Ms. Fay Coulombe of San Diego, Calif., the padded jaw trap caught 400 coyotes and numerous other animals without a broken bone or painful injury, according to an article printed by the Animal Protection Institute of America. Critics of the padded jaw trap argue that the pads are ineffective for trapping because they retain man's scent. They also contend that the pads become slippery when wet, enabling the animal to escape.

Although the push for more humane trapping methods can easily be brushed aside as something not yet needed for Montana, to do so only adds fuel to the anti-trapping fire gaining strength in Washington, D.C. However, the push to ban leg-hold traps on federal lands already may be strong enough to guarantee passage. Regardless of whether federal humane trapping legislation passes, citizens of Montana still face the responsibility of deciding what they believe is right.

GENERAL TRAPPING RULES

- Taking fur animals during the open season by means other than trapping or snaring is prohibited.
- A $10 resident trapper's license is needed to trap furbearers. Furbearers include mink, muskrat, marten, otter and beaver.
- Landowners may purchase a $1 trapper's license for trapping furbearers on their owned or leased land.
- Trappers must obtain permission of landowners before trapping on private land.
- Any person trapping furbearing or predatory animals for pelts must fasten a metal tag to traps or snares containing the name and address of the trapper. No tag is required on traps or snares used by landowners trapping with permit on their own land or irrigation ditch rights-of-way bordering the land.
- Regulations for the 1975-76 trapping season are available from regional fish and game offices or from the Department of Fish and Game; Helena, MT 59601.

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THE STILLWATER COMPLEX — BOOMING AGAIN

by Ron Stoneberg

The Stillwater Valley on the northern edge of the Beartooth Mountains in south central Montana may soon be the site of extensive hard rock mining. F&G photo by Ron Stoneberg

THE Stillwater Complex on the northern edge of the Beartooth Range in south central Montana contains one of the world's richest collections of minerals—chrome, copper, nickel, platinum, palladium, silver, gold, iron and a few more which are less known, but still valuable. But this fact is hardly big news. The mining industry has known about it for over a century and, in fact, has been active in the area at least since the 1860s. Development of the Stillwater can best be described as "boom and bust." The companies gear up, go into the area, mine like crazy for a few years, and then for various reasons—most of them economic—abandon the area.

Now, the Stillwater is booming again. The big companies—AMAX (American Metal Climax, Inc.), Anaconda, Johns-Manville and more—are there in full force. Mining technology has improved considerably since the last "bust." And worldwide shortages of vital minerals are common. Perhaps this time, mining developers will go all the way.

To the area's fish and wildlife, the forthcoming "boom" could be a forceful "bust."

continued

Five major rivers and their tributaries combine to form a productive trout fishery. The mineralized region lies on the northern edge of the proposed Absaroka-Beartooth Wilderness, so the area receives heavy use from a variety of outdoor enthusiasts. But for all this, the future looks bleak.

In 1966, the Anaconda Co. acquired the Stillwater holdings from the American Chrome Co. and a majority interest in the Mouat properties at Nye. Anaconda began intensive exploration for copper and nickel in 1967, with drilling, trenching and surface and underground geologic mapping. In addition, small quantities of ore for metallurgical testing were obtained from two adits. Since 1971, activity has been reduced and only meets the requirements necessary to maintain valid claims.

The Anaconda Co. is also active on Chrome and Iron mountains, between the West Fork of the Stillwater River and the Boulder River. However, activity since 1971 has been minimal, mostly reclamation and core drilling.

AMAX and Johns-Manville began staking claims and exploring in 1967. AMAX expanded its holdings and maintains claims through core drilling and reclamation during the summer. Initial exploration by Johns-Manville produced encouraging results from the Picket Pin area for the platinum-palladium group minerals. Extensive claim staking and sampling followed. In 1973-74, an ore zone containing platinum was located at the head of Iron Creek, east of the East Boulder River and geochemical sampling along the West Fork of the Stillwater River revealed a significant deposit of platinum and palladium.

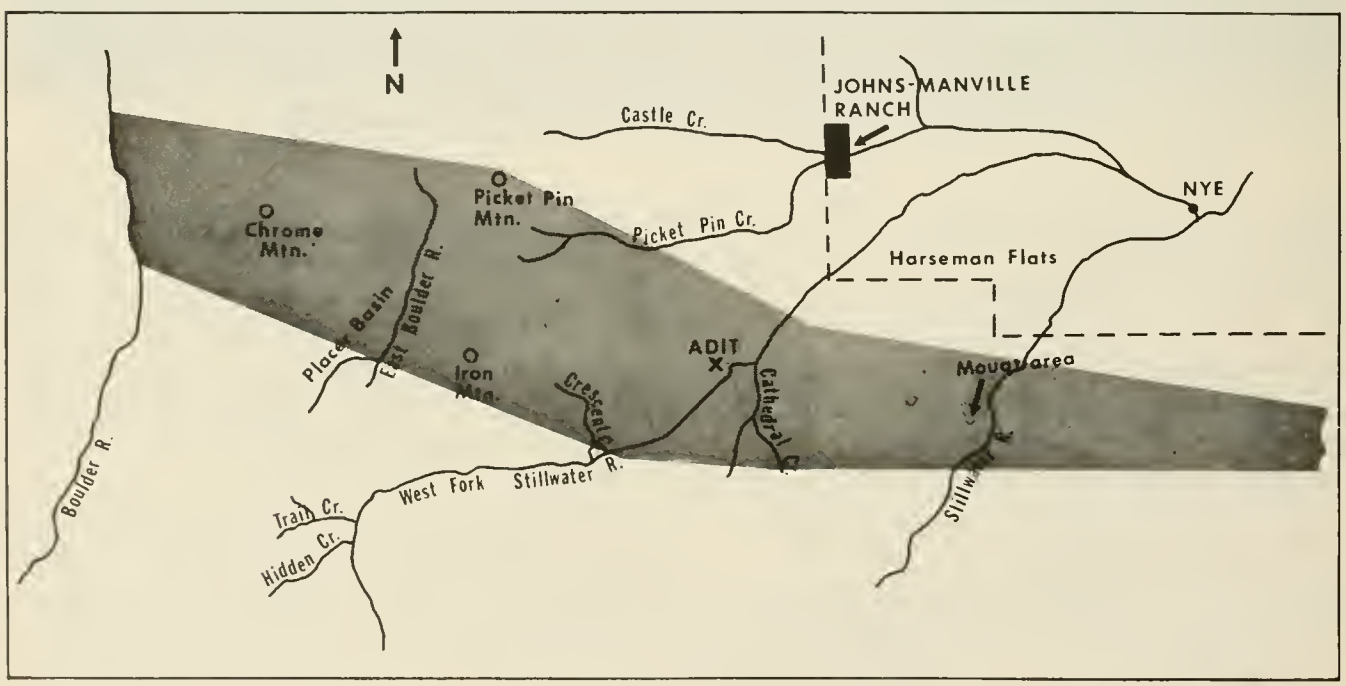
To date, a tremendous expenditure of money and resources in the Stillwater Complex has produced relatively little ore but has caused considerable degradation of wildlife habitat. Roads terracing many hillsides, collapsing buildings, cement foundations, railway tracks and settling ponds are reminders of past activity. Drill sites, pits, trenches and even more access roads are recent scars to the landscape.

Exploration has revealed the complex contains the largest known reserve of chromite (90% of known reserves in the Western Hemisphere) and one of the largest known nickel-copper sulfide deposits in the United States. At least 19% of the known U.S. platinum group metal resources exist in the complex. In addition, smaller amounts of gold, silver and iron are present.

The Anaconda Co. has located mineral reserves totaling 150 million tons. Johns-Manville has a rich platinum-palladium deposit. To top it all off, further exploration may prove mineral content higher than now suspected.

To date, it has been more economical to import foreign minerals than to mine the Stillwater Complex. But now, it may be only a matter of time before full-scale mining again becomes a fact of life in the Stillwater Valley. Activities by the Johns-Manville Corp. suggest the next "boom" may be just around the corner. In addition to an exploration adit, it purchased the 1,500-acre Picket Pin Ranch and the Stillwater Garage in the town of Absarokee. It also hired the Thorne Ecological Institute to assess the sociological and environmental impacts of impending development.

A memorandum released by the company describes the "possible future mining activity." The memo states, "If feasible, the procedure would be: (1) mine and recover the ore through a tunnel in the



The shaded area represents the mineralized zone on the north face of the Beartooth Mountains where future mining is likely. The dotted line indicates the national forest boundary.

West Fork [of the] Stillwater River Valley; (2) transport it by truck to a nearby concentrator where it would be reduced in quantity for further processing; (3) reduce to metals by smelting or leaching (or a combination), and (4) refine the metals for marketing." Preferred location for the concentrator, settling ponds and smelter is the company-owned Picket Pin Ranch. The refining phase will probably be done elsewhere.

Although Johns-Manville officials maintain the decision to mine has not been made, planning is proceeding as though the decision was, in fact, made.

Increased exploration in the late 1960s prompted considerable public interest in such mining ventures. This uproar resulted in the Montana Hard Rock Mine Reclamation Act of 1971, development of a reclamation plan by the Forest Service (FS) and formation of a study team by the Montana Department of Fish and Game.

WILDLIFE VS. MINING

Unfortunately, little information exists about the impact of previous mining ventures on the area's game populations.

In fall 1971, department researchers began gathering data on the aquatic and wildlife resources of the area. They conducted a census of game populations, defined critical areas and selected bighorn sheep wintering along the Stillwater River and the elk herd using the Horseman Flats-Picket Pin winter range for intensive study.

The bighorn sheep population, wintering adjacent to the Mouat property, apparently held its own during prior periods of development. A few elk were occasionally observed on the Horseman Flats winter range, but information suggests elk weren't present during periods of intensive mining. Mule deer, black bear and blue grouse populations probably weren't severely affected.

Apparently, elk summering on the East Boulder Plateau used the mining area infrequently—probably because of domestic sheep. During the 1940s sheep numbers declined drastically on the two allotments (Placer Basin and Trail and Hidden creeks) at the southern end of the plateau. From 1941-45, 10,550 sheep used these two allotments. From 1946-50, only 4,200 sheep, a 60% decrease, grazed these areas. The Chrome and Iron mountains allotments, which coincide with present mining activity, experienced only a 6% decrease in sheep numbers during the same period. In 1950, the FS range inspection reports first mentioned elk. They were frequently seen thereafter on the Trail and Hidden creeks allotment but never mentioned in the Chrome and Iron mountains reports. As sheep numbers on allotments were reduced, the mining activity increased.

The Johns-Manville exploration adit provided an opportunity to assess the effect of a relatively minor operation on the wildlife populations. (The adit is situated along the West Fork of the Stillwater River, upstream from the mouth of Cathedral Creek.) The FS campground at Initial Creek was used for a base camp and the road across Horseman Flats (FS Road No. 846) serviced both the adit and the camp. This road also bisects an important portion of the elk winter range. Previously, the road was closed to vehicle traffic by drifting snow, but in 1974-75, the mining company kept the road plowed throughout the winter.

The Montana Department of Fish and Game recommended the following travel restrictions: minimizing trips, restricting vehicles to established roads and limiting travel to one hour after sunrise to one hour before sunset. In addition, the FS closed the road to the general public. But these restrictions weren't closely followed.

Elk extensively used Horseman Flats during the winters of 1971-74. However, in 1974-75, very few elk used the flats. Elk previously moved between Horseman Flats and the Picket Pin area during most of the winter. In late spring (April and May), a portion of the herd moved to the steep east-facing slopes of Horseman Flats above the Stillwater River. After the 1974 hunting season, most of the herd was on the Picket Pin portion of the winter range, where it stayed until late January 1975, then moved to Horseman Flats. It remained on the flats for only three or four days and then appeared on the slopes above the Stillwater River and used this area for the remainder of the winter. Elk definitely avoided the Horseman Flats area in 1974-75—the first year Johns-Manville kept the road open all winter.

Some observers suggested that heavier snow packs in 1974-75 caused this shift in the elk winter range patterns. However, the snow was not excessive and domestic horses wintered on the flats without supplemental feed. In fact, the shift in elk use was probably due to a combination of traffic on the road and deeper than normal snow. Elk used the timbered slopes above the road for bedding and, particularly during periods of heavy snow, crossed the road and ventured out onto the open flats for feeding. Road traffic disrupted this pattern and probably caused elk to move elsewhere. This is supported by the fact that in June—when snow was no longer a factor—few elk used the flats. They remained above the road for both feeding and bedding.

Horseman Flats is also an important elk calving ground and researchers found that fewer elk calved here in 1975 than in 1974.

The adit also affected elk migration to the summer range. The 1974 information indicated the West Fork of the Stillwater River was a major migration route, with about 57% of the winter herd using this route. In addition, elk may have calved in the West Fork area. In 1975, researchers saw only one cow above the adit during the calving season and only 27% of the winter herd used this migration route. Most of the elk shifted to the Picket Pin Creek route.

continued

THE STILLWATER STORY

The Stillwater Valley, gateway to the proposed Beartooth Wilderness, offers a diverse array of high quality recreation, such as winter camping in the Beartooths (right, photo by Harrison Fagg) and first-class trout fishing (upper right, photo by Mike Sample). The valley itself displays a crystal silence (below, photo by Mike Sample) and a viable environment for many wild animals such as these bighorns wintering adjacent to the old Mouat Mine (lower right, photo by Harrison Fagg). But extensive development and associated problems such as acid mine drainage could foreclose on all this (far right, photo by Mike Sample).

Although normal patterns were disrupted, elk by-passed the mining activity and reached their summer range.

Purchase of the Picket Pin Ranch by the Johns-Manville Corp. poses another problem to the elk herd. The ranch and adjacent FS lands comprise an important segment of the elk winter range. Construction of a mill, tailing ponds, a concentrator, a smelter, roads and other facilities will certainly adversely affect this herd. In addition, the open timbered area between Castle and Picket Pin creeks, adjacent to the ranch, is a major elk calving ground.

As mining activity increases along migration routes and on winter range, this elk herd will probably suffer adverse effects.

MINING AND AQUATIC RESOURCES

The streams associated with mining claims in the complex are typical mountain trout streams in their upper reaches. At lower elevations, these tributaries to the Yellowstone River are less steep and more productive, but trout still dominate. Excellent water quality results in fish populations supported by clean-water insect nymphs and larvae, along with other invertebrate organisms sensitive to pollution.

Chrome mining and related activities in the 1940s and 50s already damaged the Stillwater drainage. Old mining and exploration roads increased the sediment carried by some Stillwater River tributaries. A dry tailings (waste sandy, crushed rock from a mill) pond adjacent to the Stillwater River poses a chronic problem because high winter winds blow tailings into the river and two of its tributaries. Now, tailings form the bulk of the beds and banks of these tributaries in their lower reaches. Both tributaries carry highly turbid water when winter winds blow. In turn, the Stillwater River is blanketed with tailings downstream from these tributaries.

Fortunately, effects of present mining exploration have been minimal. The future of aquatic resources in the area depends on the degree and location of development, federal and state regulations and mining company attitudes.

RECLAMATION EFFORTS

In 1971, the mining companies began reclaiming disturbed areas in cooperation with the FS. The Anaconda Co. attempted to stabilize settling ponds on the Stillwater River, but two attempts to hydroseed them failed. Finally, the tailings were covered with material from the old dikes. Anaconda also reseeded many of the terracing roads on its property, replacing the brown slashes on the slopes with green slashes. Unfortunately, in the Mouat and Benbow areas, just grass seed won't cover the scars of the past.

Reclamation of recent disturbances has been more successful, partially due to small size of disturbed areas. U.S. Steel operated in the high country of Iron and Chrome mountains before ecological restrictions. Fifteen years later, their pits and trenches are still evident. AMAX, Johns-Manville and the Anaconda Co., working in the same area, backfilled their trenches and reseeded, fertilized and covered most of the newly disturbed areas with logs.

Primarily exotic grass species, recommended by the FS, have been used for reseeding. This is a dangerous practice since it introduces untested species into this fragile alpine area. It would be better to prepare the seedbed and allow natural revegetation, if possible. Other more desirable methods employed in this area include harvesting native seeds from adjacent meadows and planting plugs of native vegetation. Results from the plugs are encouraging and planting them is probably the best method for speeding up natural revegetation of disturbed areas. These recent reclamation efforts have removed many eyesores and the practice of drilling in unreclaimable areas has stopped.

NATURAL RESOURCE MANAGEMENT

Most of the Stillwater Complex rests on national forest lands, divided between the Custer and Gallatin National forests. Although the mineralized nature of the complex has been recognized since the beginning of the national forest system, little, if any, long-range planning has occurred. Lack of public concern and the hand-binding, antiquated Mining Law of 1872 have hampered efforts.

The FS has attempted to manage the national forests in the public's best interest. This has often meant exploitation of natural resources—timber harvests, grazing, mining, etc. Recently, public pressure has demanded a shift to management for aesthetic values. Changing public attitudes have resulted in many confrontations between wildlife enthusiasts, environmentalists and the FS.

In the Stillwater area, the FS has inadequately planned for impending mineral development. Renewed interest in the minerals of the Stillwater Complex coincided with an increased ecological awareness. The FS was caught without a management plan to insure orderly removal of the minerals. To date, regulation has been on a piecemeal, case-by-case basis.

Hopefully, the FS' Dakotas Planning Team will help gather the needed information. The group has begun a "land use planning process" on the Beartooth Mountains, including the Stillwater Complex. The planning team divided the area into ecosystems and will determine the form of development each will support. The conclusions will guide the district ranger in managing the forest resources. Although the system has its shortcomings, it is an encouraging first step and could develop into a useful management tool. The real test of the planning unit's efforts, however, will be developing a long-range plan for mining in the Stillwater Complex.

Written before appearance of environmental concern, the archaic Mining Law of 1872 is designed

to encourage mining on federal lands—something it is still effectively doing. One could compare this to operating motor vehicles under laws written to regulate horse traffic. The mining companies have responded to public criticism by adding new words to their vocabularies, such as "environmental," "mitigation," "ecological" and "compatible." In practice, environmental concerns are considered only when they are compatible with the mining operation. Until these federal laws are repealed, no legal means exists for restricting or preventing mining operations on public land—regardless of the potential for environmental degradation.

In 1974, the FS adopted regulations on use of surface lands by companies and individuals operating under the 1872 ruling. In effect, these rules shifted the ecological responsibilities from the mining companies to the FS. Since the FS exercises no control over mineral development, its role is reduced to regulating the cosmetics.

The Johns-Manville Corp. adit on the West Fork of the Stillwater River pointed out the shortcomings of the new regulations. The FS has only 30 days (with a possible extension of 60 additional days) to assess the environmental impact of a proposed mining venture. The quality of the first environmental analysis report for the adit points out that more time is needed for a comprehensive assessment. Another drawback is no provision for input from the public and government agencies (except the Department of the Interior). In the case of the adit, fish and wildlife resources received negligible consideration, even though qualified personnel were available for consultation. Lack of public involvement resulted in a law suit by Friends of the Earth.

The regulations allow mining companies to chop up the countryside in piecemeal fashion. The companies only submit operating plans yearly and the FS responds to each plan individually. In an area where more than one company operates, this leads to duplication and unnecessary environmental damage. Along the West Fork of the Stillwater River, for example, the Anaconda Co. has holdings upstream from the Johns-Manville claims. However, the future plans of the Anaconda Co. were not incorporated into the recent planning and development of this area.

The regulations also enable the companies to create considerable environmental impact and to extensively develop holdings during the exploration process. Much of the damage is already done by the time environmental impact statements are written and public criticism is solicited. Johns-Manville has indicated if mining occurs, it will occur near the adit. The FS cannot coordinate exploration and development impacts since the development plans are neither required nor have they been offered to the FS.

If the Stillwater Complex is mined, the ecology of the area will be affected and the habitat degraded. The extent of the degradation will partially depend on long-range planning by the FS. Documenting areas of potential development would benefit both the FS and the mining companies. Each company would submit potential plans and alternatives for ore extraction, hauling, concentrating and smelting, plus support facilities and feasible locations would be listed. The report would then be available for public scrutiny and debate. As a result, the FS would have a set of guidelines for approving or disapproving operation plans and the mining companies would know in advance the restrictions and public reactions they would be facing. Most important, the valuable natural resources of the area would be given the consideration they deserve.

The Stillwater region has been battered by unregulated mining for over a century. It is now limping through a period of regulations designed to accommodate mining. Hopefully, the attributes of the area—wildlife, quality waterways, a trout fishery and a wide array of minerals—will be protected and managed with the public interest in mind—*not* regulated only along the economically oriented plans of some of the world's largest mining companies.

JEWELS

Johns-Manville Corp. may soon start mining platinum group metals from the Stillwater Complex. But why? How does America use platinum?

These metals have several industrial uses—electrical contacts, dental and medical equipment, an ingredient in the manufacture of glass and synthetic fiber and as a catalyst in chemical reactions. The latter promised to create a potential market two years ago when the auto industry planned to install catalytic converters in new cars to reduce auto emissions. (Each converter would contain a small amount of platinum.) However, the catalytic converter will probably be dropped.

Denied this market, platinum producers are now trying to bolster sales by creating a demand for platinum jewelry. Testifying to this, the June 11, 1975 issue of *The Mining Record* quoted a spokesman for a major refiner that "a substantial public relations campaign was now in full swing to encourage the use of platinum jewelry. A markedly increased demand is expected to materialize within 12 to 18 months."

Ron Stoneberg, author of this issue's major feature on the Stillwater, challenges this by saying, "It seems a shame that this irreplaceable jewel called the 'Stillwater Valley' should be reduced to a string of black beads signifying a false position of wealth."

In more simple terms, if you don't like how extensive mining activity will impact the Stillwater Valley, its wildlife and trout-filled waters, don't buy platinum jewelry.

editorial

mining laws and the public

The fish and wildlife resource in Montana, like all living things, depends on the *surface* of the land. In many cases, however, our industrialized society depends on minerals and fossil fuels lying *beneath* the surface. No matter how well intentioned or careful mineral extractors try to be, their presence and activity impact in varying degrees fish and wildlife, for which the Department of Fish and Game is responsible.

Efforts of conservationists to protect wildlife during the process of mining *leasable* commodities or minerals such as coal and oil are well documented and have received considerable public attention. These same conservationists are working to help fish and wildlife threatened by the extraction of *locatable* minerals such as copper, silver, chrome, lead, platinum, etc.

When one struggles to protect wildlife during mining, he should understand the distinction between leasable and locatable minerals. Initially, both types of minerals belong to the public and are usually administered by the federal government.

With leasable minerals, a developer applies for a lease. Eventually, he may be granted the lease giving him a right to extract the mineral. Controls are usually imposed, and they are generally publicly advertised. These controls—found in both federal and state law—can be used to protect and restore wildlife habitat.

With locatable minerals, however, developers have more substantial rights granted to them by federal mining laws. These laws basically say if a prospector finds a valuable mineral, stakes a proper claim and keeps up with his annual assessment work or patents the claim, the mineral and the right to mine it are his.

In dealing with locatable minerals, protecting wildlife is more difficult. In an attempt to protect the environment, the Montana Legislature passed the Hard Rock Mine Land Reclamation Act of 1971. This act, administered by the Department of State Lands, has led to an improved opportunity for public officials to protect wildlife during mining.

In 1975, the legislature substantially eased a confidentiality provision of the 1971 law that kept interagency and public participation in planning mines and reclamation programs minimal. Today, development of a hard rock mine is more open to public comment and subject to environmental review. Although the 1975 law erased some secrecy provisions, obtaining information on future mining activities still poses a problem—particularly during the exploration phase which remains confidential.

The Stillwater project is the first major development going through the regulatory process with substantial public participation. The mining companies have a platinum-palladium find at stake. And the Department of Fish and Game has elk winter ranges and trout streams at stake.

Once again we are confronted with the basic question. How much wildlife do we continue to abandon before we say, "no more"? How do we balance the private rights granted in the federal law with the public interest demands of state law? (The federal Mining Law of 1872 clearly grants the miner his discovery, and the state law clearly speaks to preserving natural ecosystems.) How do you balance an elk winter range with mines, mills and tailing dumps? How do man's economic needs balance with his expressed desire for fish, wildlife and places of serenity and beauty?

We must face these questions now. They are hard questions and there is a tendency to defer hard questions to another time and another place.

For wildlife in the upper Stillwater, there can be no other time or place. For the animals, the question is not one of compromise, but one of survival. Perhaps for the first time, it is clearly a public question with numerous opportunities for citizen involvement. If Montana wildlife is to survive, it will only be because the public demands it.—*Jim Posewitz*

THE CATCHALL

One For Wildlife

Despite Department of Fish and Game protests, wildlife hasn't fared well in the subdivision review process. Too many times, wildlife values have not been considered in the face of development, under the false notion that wildlife can move elsewhere. However, a recent Montana court decision which calls for assessment and evaluation of wildlife values may offer hope for the future.

The decision involved the proposed Beaver Creek South subdivision, a 95-acre development 50 miles south of Bozeman, near the Big Sky complex. The development was also located directly adjacent to the Gallatin Game Range, a game management area purchased by Montana sportsmen for big game winter range and public hunting. Both the proposed subdivision site and the game range are valuable winter range for elk; moose, deer and game birds use the area frequently.

The entire region is renowned for its wildlife. The department noted in its review of the subdivision's impact that Beaver Creek South, like any development in good wildlife habitat, would decrease the carrying capacity of the area for wildlife. Also, the department felt that future "people concentrations" might change use of the area and decrease the opportunity for wildlife observation and hunting.

In the court case, the Montana Wilderness Association and the Gallatin Sportsmen's Association, Inc., sued the Montana Department of Health and Environmental Sciences. Backed by the Environmental Quality Council (EQC), the action was filed on grounds that the Health Department failed to adequately assess the environmental impact of Beaver Creek South, as required by the Montana Environmental Policy Act (MEPA).

If the lower court decision on the Beaver Creek South development survives appeals, elk and other wildlife will receive more consideration in the subdivision review process. Photo by Jerry Manley.

MEPA, which created the EQC, requires state agencies to "use all practical means" to study the environmental impacts of their decisions, and to base their decisions on results of such studies. According to EQC Director John Reuss, MEPA calls for state agencies to make decisions on a wide range of environmental concerns, including wildlife, energy, highways, aesthetical considerations, schools and the total impact of growth.

Judge Gordon R. Bennett confirmed this in an Aug. 29, 1975 decision in Helena. The decision halted further subdivision on the Beaver Creek South site until a proper environmental impact statement (EIS) is filed. Judge Bennett blasted the Health Department procedure for preparing impact statements, terming it "wholly inadequate." He further stated that MEPA was "not designed to set up another conveyer belt for paper through the state agencies." Bennett noted, however, that many environmental concerns are outside the expertise of the Health Department and suggested that certain responsibilities be "farmed out" to appropriate state agencies. The Department of Fish and Game welcomes such a procedure.

This decision was the first real test case for MEPA, and implications of the decision seem far-reaching. Most important, the decision clarifies the intent of MEPA, making it plain that the Health Department must consider a broad range of environmental concerns in future EIS preparation, not just sewer and water. Wildlife impacts must be assessed and evaluated, as will other heretofore unrecognized impacts such as energy requirements and *need* for the development. If it endures the Supreme Court test presently under way, the Beaver Creek South decision will provide a necessary legal tool for protecting wildlife from irresponsible development.

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FORCES COMBINE TO SAVE THE TONGUE

The Montana Department of Fish and Game wishes to extend its sincere thanks to the traditional coal field combatants who in November 1975 declared a truce and combined their resources to preserve the flow of the Tongue River.

The flow of water was scheduled to be cut off while repairs were made to the outlet of the Tongue River Reservoir. Early cost estimates and other technical problems seemed to require that the river's entire flow be curtailed during the repair period. The enterprising Crisafulli brothers of Glendive, learning of the problem, predicted they could both solve the technical problems and reduce cost from $50,000 to $32,000. Funds for even these reduced costs, however, were not at hand.

At that point, four energy companies pledged financial support for the project and were joined by some of their traditional critics in an effort to meet the project's costs. Participating energy companies were Wesco Resources, Decker Coal Company, Consolidation Coal Company and Shell Oil Company.

Other contributing groups included the Yellowstone Basin Water Users Association, District Five of the Montana Wildlife Federation, Rosebud-Treasure Counties Wildlife Association, the Montana Wildlife Federation and the Billings-Yellowstone Valley Audubon Society.

Contributing state agencies included the Department of Natural Resources and Conservation and the Department of Fish and Game.

The Tongue River's future, as Montana begins to respond to energy demands, is one of the major environmental problems of the coal region. It is extremely gratifying to see the concern afforded it in 1975. On behalf of the fish and wildlife resource of the Tongue River and the sportsmen of Montana, the Department of Fish and Game extends its sincere thanks to all participants who made the project a reality.

WHEN THE SYSTEM BREAKS DOWN

The cyrano of all water birds, the white pelican, possesses a ponderous pterodactyl-like bill equipped with an elastic pouch that serves as a dip net in catching fish.

Capacity of the pouch? An ornithologist once poured in 3½ gallons of water before any spilled out.

As a fish catcher, the white pelican is pretty hard to beat. In fact, he's the envy of most fishermen.

But no matter how efficient the system, occasionally it breaks down—like when everything has left-hand threads or when the normal course of events turns about face and drowns you. Like when three Dodger runners found themselves on third base, like when a white-tailed buck crashed through the Oxford Bar's plate glass window in downtown Minneapolis, like when Dewey woke up and found he had to phone Truman.

This rare photo shows a pelican which drowned after engulfing a large cottonwood branch while fishing in murky waters of the Yellowstone River near Glendive. The photo was taken by Bob Newell, aquatic ecologist for the Department of Fish and Game.—*Ken Walcheck*

HIGH COUNTRY NEWS PUBLISHES SPECIAL EDITION

High Country News (HCN), published in Lander, Wyo., has been printing the inside story on environmental issues since its inception in 1969. Founded by Tom Bell, the small biweekly publication has weathered many storms while providing accurate and factual information concerning natural resource issues.

HCN recently published a special edition, "HCN: A Roundup, 1969-1975." It contains the best articles of the magazine's six-year history and effectively portrays the evolution of many environmental problems. Included in the special edition are sections on "High Country Wildlife," "Our Use of the Land," "Fossil and Nuclear Energy" and "People of the High Country."

The special edition also includes the history of the publication. Founded in adversity, HCN nearly folded in 1973, only to be saved by contributions from devoted readers.

Copies are available for $1.50 from HCN, Box K; Lander, WY 82520.

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WE SLIPPED ON SLIPPERY BILL

In the last issue, we misplaced the Slippery Bill Subdivision on the map accompanying the Catch-all article. We've redone the map to show the correct location.

ENDANGERED SPECIES?

Attention! The mule deer is not an endangered species. While this may seem elementary to MO readers, small children who read information to the contrary on the back of cereal boxes are easily misled, as are other uninformed people.

In what must be one of the most insidious attempts to manipulate the emotionalism which has been generated by the genuine concern which many people have for threatened and endangered species, the Nabisco Corporation, under guidance of the World Wildlife Fund (WWF) has advertised the mule deer as an endangered species.

The deception works as follows: Nabisco makes an offer on the back of a cereal package for a needlepoint kit, each featuring an "endangered species." Sandwiched between such bona fide endangered species as the peregrine falcon and the leopard is the mule deer, an animal which many biologists feel is more numerous now than when Columbus landed. The offer further states that part of the proceeds from each kit purchased will be returned to the WWF, no doubt to continue such propaganda.

The WWF is a private, non-profit international conservation organization which has supported scientific research and conservation projects of tremendous value to wildlife. In recent years, however, it has become recognized for outspoken anti-hunting sentiments. This philosophy, genuine in its concern for wildlife, has at times degenerated to emotionalism instead of scientific wildlife management. Such deliberate attempts at disseminating incorrect information only destroy the credibility of the WWF as any kind of scientific organization and, in the long run, do more harm than good for wildlife.

Many organizations such as the WWF are engaged in what they term the "preservation" of endangered species. Concern for an endangered animal must come under a much broader spectrum, because the ecological requirements of the animal must be protected. Focusing on a particular issue, such as hunting, only detracts from the larger and more important problems.

WHOOPING CRANES VISIT MONTANA

photo by John Martin and Kermit Bolstad

Four whooping cranes paid a Halloween visit to the Medicine Lake National Wildlife Refuge in northeastern Montana, and three of them liked it so well they stayed for a record nine days.

Although whooping cranes are spotted in Montana about every other year, it is rare for the big birds to stay for more than a day or two. Always in a hurry to reach their wintering grounds at Aransas National Wildlife Refuge in Texas, they are seldom spotted by more than a handful of persons. (See Dennis Flath's article on the whooping crane in the Nov./Dec. 1975 *Montana Outdoors.*)

This year was different, however. Four of these majestic winged creatures first were sighted near the Medicine Lake Refuge on Oct. 29. Among these four birds was a juvenile, believed by National Audubon authorities to be one of eight whoopers produced on the Canadian breeding grounds. Although one of the adult birds stayed for only two days, the remaining three stayed nine days, providing many persons with the rare opportunity to observe these birds.

The whoopers were always observed from at least a quarter of a mile away because they are very wary and refuge personnel did not want to risk disturbing them. U.S. Fish and Wildlife Service employes also observed the birds constantly during daylight.

About 200 persons saw the whoopers, including ranchers, biologists, construction workers and two busloads of students from a local school.

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CBS DESCRIBES HUNTERS

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THE GUNS OF AUTUMN
—the unorthodox approach—

article by Bill Pryor
illustration by Vern Craig

CBS put it on the line. If you want to keep hunting, you'd better start fighting, because we're massing our armies against you!

CBS (Columbia Broadcasting System) wants to scrap. And, they want to do it with you and me—hunters in the U.S. They say they don't. They say they just want to show a balanced view of hunting across America. They produced "The Guns of Autumn," a 90-minute television documentary that took a year to make and cleaned their pockets of several hundred thousand dollars. CBS did it up slick. Why shouldn't they? They're professionals at moving a message.

Was it balanced? Did they color the hunter in truthful shades? Did CBS present hunting as right or wrong? Can you tell from "The Guns of Autumn"? Did they have a purpose, and if so, what in the devil was it?

WHAT WAS IT?

"The Guns of Autumn" aired on nationwide television at 8:30 p.m., Friday, Sept. 5, 1975. CBS Television Network Sales cranked out news releases during the summer saying it would be, "A startling and fascinating filmed report of man's most ancient activity as it is practiced today by over 20 million American men and women of all ages. . . . In an *unorthodox* approach that avoids the opinions of psychologists or the armchair attitudes of partisan spokesmen, 'The Guns of Autumn' lets this remarkable story tell itself, on its own terms. . . . [emphasis added]"

The stage was set. Some folks were wary since television's record for truth in broadcasting conservation issues took a drubbing from NBC's earlier production, "Say Good-bye." National Shooting Sports Foundation, Inc. (NSSF), in a widely distributed letter from its president, Warren Page, said of the impending program, "Theoretically, it's objective, but our study of CBS' own material in light of their record in such matters leads us to think, as one noted outdoor writer commented after seeing the film, that it is 'scurrilous'."

NSSF hadn't closed the door completely though, and continued, "If you find it a worthwhile, acceptably honest portrayal [of hunting], say so in a letter to CBS Vice President Bill Leonard. . . . If you find it, as anticipated a misleading mishmash of misinformation about the sportsman-hunter, say so not only to the network. . .but to everyone else you could think of limited only by your imagination."

CBS got wind of hunters cancelling trips into the woods to sit home in front of the "tube" taking notes, and made their next move. "Echoes of the Guns of Autumn," a quicky rehash of "The Guns. . ." complete with opposition viewpoint, was scheduled to air Sunday, Sept. 28 at 6 p.m., the day after National Hunting and Fishing Day.

That was the state of affairs on Sept. 4. CBS would show an unbiased, cross sectional, good ol' center of the road analysis of hunting in the U.S. Twenty million hunters were waiting to see the audio-visual extravaganza. And, going about their daily routine unaware of the waiting explosion was the true prize to be captured—the "mass"and its decision-making opinion. Nonhunters, 180 million strong, had missed out on the pre-campaign skirmishing, but CBS planned for their entry into the fray right on cue!

Montana, out of the mainstream of TV program shuttling, had to wait one day to see "The Guns. . ." which was videotaped and replayed on Saturday, Sept. 6. But, the rest of the U.S. was treated to the documentary on schedule. It was best described by CBS' own promotional term, "unorthodox."

It was unorthodox because, billed as a documentary, it did not present an evenhanded comment on hunting, hunters and the conservation movement which underpins the ability to hunt. Instead CBS Producer Irv Drasnin started with a conscious, or unconscious, predisposition toward hunting. He then melded visual scenes in the hunting field to show one message, while words of the script gave another. The stronger of the two messages—the disturbing visual scenes—was the one remembered. Later criticized for not relating the accomplishments hunters' dollars have bought in the last 50 years, Drasnin pointed to the words which carried that message. But the damaging visual message seen simultaneously was the one people remembered and reacted to.

A lot of people across the U.S. had their tape recorders rolling and took down every word. It won't do them a bit of good! It's impossible to extract wording from "The Guns. . ." which in itself is libelous to the hunting issues. The TV industry has learned the subtle artistry of pushing a point of view clandestinely under the door.

A primary example came when a voice said, "The

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hunter's way is actually quite humane." At that moment, the TV screen showed a dead antlered deer being thrown into the back of a pickup truck.

CBS says they told what is true. Humans killing deer is more humane than deer starving to death because of overcrowded, hard winter conditions. But, Drasnin constructed the deer-into-the-truck scene to convey something more. Emotion was built into that scene. The idea of humane humans doesn't mesh with a dead animal being thrown into a truck. It's incongruous. A visual showing deer starving for lack of range, followed by the alternative of taking deer by hunting would have been true. Millions of nonhunters viewing the program certainly couldn't have seen through the emotion to grasp and understand the underlying truth of the verbal statement.

Drasnin knew this and repeated the trick consistently for 90 minutes. Other segments treated similarly were:

•shooting black bear in a garbage pit in Michigan.

•hunting black bear with vehicles, dogs and walkie-talkies in Michigan.

•deer and elk hunting in Utah and Colorado, including a pre-hunt dance a la primitive, "savage" pre-hunt ritual.

•an elderly gent passing a verdict on hunters and their effect on deer in Utah. His amateur assessment? "They ain't none left." Hunters killed them off, including fawns.

•waterfowl permit hunting at Pymatuning, Penn. Hunters were used to belittle other hunters, ". . .This is a good place to get killed."

•buffalo hunting in Arizona managed by that state's Game and Fish Department. The message was the buffalo live at the pleasure of the hunter. Each year, from some dark, primeval urging, hunters come to kill buffalo trapped in a pen.

"The Guns. . ." achieved what it set out to do. It was a masterpiece. If for no other reason, one has to admire the way CBS presented its raw point of view in such a slick, slippery, underhanded manner. Just think what that upper echelon of "boob tube" executives could turn out if they were all members of Boone & Crockett. The conservation battle could be won in a few days hands down—with access to all those cameras, stations, towers, writers and film editors.

AFTERWARD, THE DELUGE

Nobody could watch that program and come away unaffected. Before TV stations could even identify themselves after the program, telephone switchboards at affiliate stations and CBS' New York headquarters were ablaze.

Hunters called to curse, complain, comdemn and stutter into the mouthpiece.

Anti-hunters called and vented their blistering heat at all who hunt, or had even imagined in childlike innocence that they would like to hunt.

And then the payoff came in. As rabid, convinced and determined as the most dyed-in-the-wool anti-hunters, that "quiet majority," who 90 minutes earlier had no opinion, entered the fracas. The emotion of "The Guns. . ." got to the uncommitted. Their minds had been made up just as CBS had intended they would be. From now on, hunting, and the benefit conservation derives from it, will ply against twice the tide of opposition as before "The Guns. . . ." CBS did that for conservation in America.

From now on, hunting, and the benefit conservation derives from it, will ply against twice the tide of opposition as before "The Guns. . . ." CBS did that for conservation in America.

CBS didn't receive as many responses to any of its previous documentaries. In the first few days after the broadcast, they received 20,000 letters and several thousand phone calls. Network officials evaluated the reaction at about six to one against the program.

The weeks wore on and name-calling continued. Letters were written to congressmen, and the "Complaint Division" of the Federal Communications Commission (FCC). The commission stated it would wait until "Echoes of the Guns of Autumn" was aired to see if sufficient reason existed to investigate CBS for violating the fairness in broadcasting clause of their broadcasting charter.

"Echoes. . ." aired and gave some lip service to hunters and their contribution to maintaining wildlife. They even showed a few scenes from Remington Arms' movie, "A Question of Hunting." The FCC has been awaiting reaction to this second program to see if they'll take action against CBS. As of this writing, they're still waiting.

The damage is done. Only a full-blown, serious effort on the part of some TV network can restore some understanding of hunting and its contribution to wildlife. ABC, CBS and NBC have not indicated they intend to do so.

PUTTING IT ALL TOGETHER

What did CBS accomplish? They bought the opinions of millions of Americans and ushered them into an anti-hunting camp.

They turned hunters against each other, by using one to disparage another in "The Guns. . ." and by causing the whole hunting institution in the U.S. to come down with both feet on that elusive soul called the slob hunter. Many of the hunters appearing in "The Guns. . ." were accused by everyone, including us hunters, of suffering from slob-hunting syndrome. What about their story and how did they become synonymous with all that's wrong with hunting today?

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Jack Atcheson, guide, outfitter and taxidermist from Butte, Mont. did the best job of investigating the production. Atcheson personally telephoned nearly everyone who unwittingly appeared in "The Guns. . ." as a typical hunter. His findings are interesting.

Hunters were approached and told that "The Guns. . ." was being filmed as a Bicentennial recognition of the heritage of hunting. It would be tasteful and not anti-hunting, CBS filmers claimed.

The primitive pre-hunt dance in Utah was filmed by the CBS crew in a bar, and it's not known if any of those filmed even hunted.

The old gent in the street claiming that hunters killed all the deer including the fawns was Ray Jensen. When his comments were filmed, he was selling tickets for a "Big Buck Contest." He hasn't hunted for many years due to his inability to get around. He's 81. He told Atcheson that there were no deer in Utah when he was a boy, and that there are more now.

The killing of the fallow deer at Louie's Game Farm outside Detroit happened in less time than CBS said. They dragged the sequence out by splicing and reshowing the kill film. To add insult to injury, the CBS crew ate a meal of wild pig, elk and buffalo, thanked Louie and his wife for their kindness and complimented them on their "wonderful organization." Louie is suing CBS.

Ronald Perkins, Arizona contractor, was contacted by John Russo, game management division chief for the Arizona Game and Fish Commission, who relayed a request from CBS to allow filming of Perkins' buffalo hunt. Again, CBS told Russo the program would be a level-headed analysis of hunting in the U.S., with no bias. Arizona has herds of buffalo which live on restricted range because of "progress" in the U.S. The range has food for a specific number. When that number is reached, excess animals must be done away with. Arizona decided to sell permits to kill the excess. The money they receive goes to manage and perpetuate other wild animals in the state. Those are the facts. CBS showed Perkins blasting a buffalo in what appeared to be a pen. The message of what "progress" has done to the fate of the buffalo in America was conveniently muted.

WHO WOUND UP THE CBS TOP?

Most people in the U.S. live in cities east of the Mississippi River. You don't get much of a feeling for wildlife or an understanding of the hunter's place in conservation walking the streets of Baltimore all your life.

Anti-hunters are serious about their conviction that killing wild animals falls into the category of cruelty and should be stopped. They are well-educated, influential citizens who will stop sport hunting in the U.S. as soon as their numbers are large enough to win that referendum.

Court jester for the group is Cleveland Amory, president of the Fund for Animals. On Sept. 7 an ad in The New York Times asked, "Did you see 'The Guns of Autumn'? . . .If you didn't, ask someone who saw this incredible expose on the 'sport' of hunting. The Fund for Animals is the largest and strongest anti-hunting organization in the world."

Amory even took responsibility for the inception and fruition of "The Guns. . ." In his syndicated column, he was asked to what extent "The Guns. . ." was based on his book "Man Kind? Our Incredible War On Wildlife." His answer? "The recently released paperback edition of 'Man Kind?' says on the cover that it sparked 'The Guns of Autumn,' and it certainly did." After Amory took the book to CBS and much pondering went on, they began work on the project, according to Amory. He says a CBS executive told him they couldn't give him full credit because he was so anti-hunting and, "We simply couldn't afford the association with you."

"It did not say that every time a bird watcher, camper, hiker and/or anti-hunter go for a walk and view wildlife, they are usually receiving a free ride paid for from the hunter's pocket."

Amory and most anti-hunters typify the adage, "a little knowledge is a dangerous thing." Seeing a bullfight in Nogales, Mexico 25 years ago sealed his fate to, "eliminate cruelty whenever, however, wherever it occurs." The goal of anti-hunting groups and the Fund for Animals is to seat their members on governing boards of conservation agencies throughout the country such as our Montana Fish and Game Commission. By doing so, they feel they can force their ethics onto the hunters of the country and "eliminate cruelty. . .wherever it occurs."

MICHIGAN IS SUING

The United Conservation Clubs of Michigan are suing CBS for $300 million because "The Guns. . ." humiliated and embarrassed the state's 1 million hunters.

The suit charges "The Guns. . ." sought to "portray the Michigan hunter in the worst possible light, making him appear a malicious, unfeeling killer and despoiler of wildlife." It alleges CBS paid Amory $2,000 "for suggestions on how to downgrade and denigrate the hunting fraternity."

Indeed, many hunters were taken to task by newly initiated anti-hunters. One of the lawyers for the Michigan group stated, "One hunter reported that his job was in jeopardy after his nonhunting boss saw the show. . . . Another hunter was told by his nonhunting neighbor, 'Now I know what you do when you go out there and I don't want anything more to do with you'."

The suit suggests that any damages awarded to state hunters could be put into a fund for purchase of "wetlands and wildlands."

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TREASURE STATE REACTION

Here in Montana the reaction was muted when compared with the agonized cries heard elsewhere. The Fish and Game Commission adopted a resolution that said, in part, ". . .The Montana Fish and Game Commission requests that equal time be committed by CBS to an accurate portrayal of the hunter's contribution to wildlife and to the public exposure of the land and water abuse that is diminishing America's wildlife heritage."

That part about land and water abuse clicked something into focus. All through "The Guns. . ." I kept hearing something in the back of my mind that the commission pinpointed in its resolution. It was the sound of the bulldozer, the clang of the developer's construction in the middle of a winter range and the scrape of a big bucket ferreting out coal beneath a surface where prairie grouse once danced. Drasnin, you blew it. You had a chance that people bent on working for conservation dream of. You could have told America about the real problems wildlife face in just keeping their remaining habitat.

We sit here—hunters and professed protectors of wildlife—fighting with each other. Meanwhile the cement keeps going down, the gravel keeps coming out and animal numbers cannot sustain themselves if the land they have left is taken from them. As an example, when the U.S. Federal Highway Project is complete, concrete will cover a land mass the size of Delaware. That's a lot of wildlife range gone. In many states "progress" has almost shut hunting down. A hunter has two choices there: Go to a hunting preserve, possibly the future of all hunting, or sit down and watch CBS weekend football. Someday the animals we have left might be confined, like the buffalo in Arizona, to an area for which "progress" could find no other use. Perhaps developers stand to gain, so they cheer as hunters and anti-hunters tear at each other.

HUNTERS COULD HAVE TOLD THEIR STORY

If I were a gambling man, I'd bet on the anti-hunters to win this skirmish. We hunters can fault no one but ourselves. We could have had it another way. Hunters could have told their story first. Fred Evenden, executive director of The Wildlife Society, an organization of professional wildlife biologists which keeps tabs on wildlife management comings and goings, had a warning for all directors of conservation agencies in North America. In a 1970 newsletter, he wrote of the ". . .increase in negative attitudes" toward hunting and urged that directors "produce, through the International [Association of Game and Conservation Directors], a united effort to move toward a *thorough education of the entire public*, not just the harvesting public we normally serve." This was never done and now the anti-attitudes of the uninformed are broader, deeper and stronger than ever.

Finally, it all comes down to killing animals. Those opposed to it say hunters are cruel for doing it. Hunters say it's a part of life and in the process we're providing a tool for managing wildlife. These are uncompromising points of view, and they become tangled with philosophical, ethical and even religious beliefs.

A scene that happened years ago when I visited a packing house in St. Louis is still etched in my mind. One black angus and two white-faced cattle were herded single file into a narrow chute. A man stood on a platform above them and gripped a black tube half the size of a baseball bat. It hung from the ceiling by a black electric cord. Businesslike, he placed the end of the tube on the angus' forehead and squeezed the trigger. A seven-inch steel spike shot from the barrel through the skull into the brain and retracted. The steer was dead. Its legs folded. The chest went to the floor, anal sphincters relaxed and the two white-faced cattle were sprayed with its feces. Their eyes were wild with terror as they tried to climb out of the pen. The executioner knew his business and all three were dead in less than one minute.

Cattle die in a packing house so an anti-hunter can eat meat. But he doesn't want the hunter to kill to eat meat. There's something wrong with his analysis of dying and eating meat.

"The Guns. . ." did not give hunters their due for spending $5 billion on wildlife over the past half century. It did not say that every time a bird watcher, camper, hiker and/or anti-hunter go for a walk and view wildlife, they are usually receiving a free ride paid for from the hunter's pocket. Many thinking people realize this and buy hunting licenses each year to support wildlife management, even though they do not hunt. But, a growing number of anti-hunters want it one way—"Hunters, stop the killing." Then who will pay for wildlife conservation in this country?

Is the anti-hunter's reverence for life well founded or merely a foppish fad? It's a little of both. CBS, for example, exhibited a hypocritical attitude in its *TV Guide* of Sept. 27-Oct. 3. The guide reported that WBBM-TV, a Chicago station owned and operated by CBS, commissioned a study by Entertainment Research Consultants of San Francisco to find out what would "spike" audience interest. The research firm used galvanic skin responses to rate individual's reactions.

Blood and gore scored high—there's plenty of that in television today. Apparently, bloodshed is inhumane for deer park operators but okay when there's money (and rating points) in it for broadcasts. So much for CBS' interest in wildlife for altruistic purposes. Violence is fine when you're showing children how to mutilate and maim by way of the cop operas.

So much for the passing of this minor bit of history called "The Guns of Autumn." CBS assesses it as one more shovelful in the grave of the American hunter. Hunters still have time to fight back, but they better hurry.

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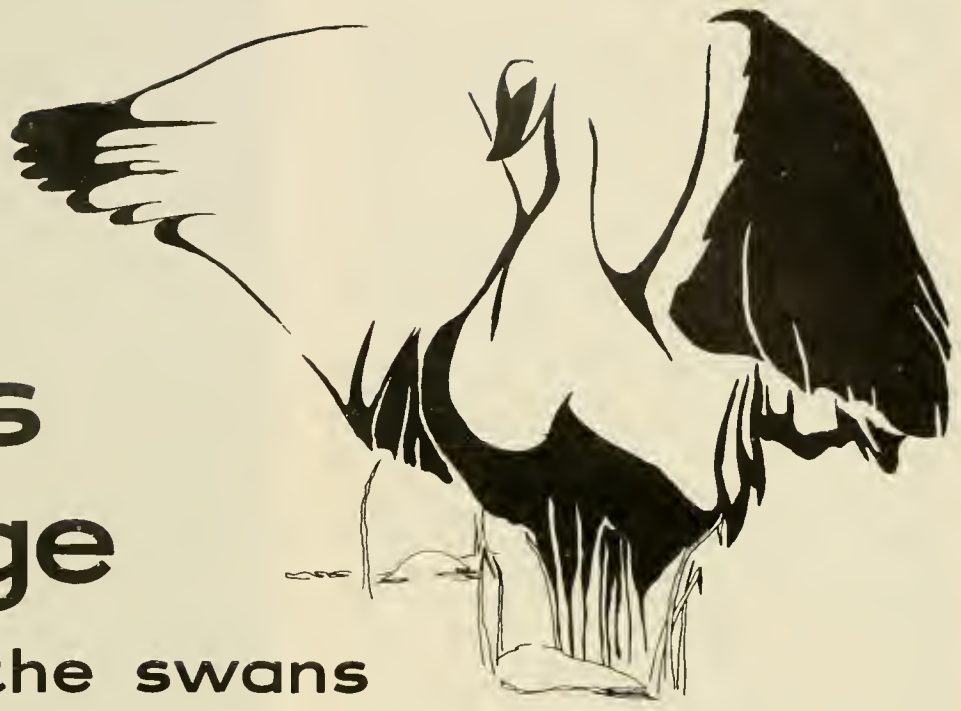
Red Rocks Refuge

valley of the swans



by Hank Fischer

illustration by Donita Sexton

IN 1912, with trumpeter swans rapidly declining in the United States, eminent ornithologist Edward Forbush made a dire prediction about the big bird's future. "Total extinction," he said, "is now only a matter of years. Its trumpeting call will soon be lost in the silence of the past."

Twenty years later, it seemed as if Forbush's alarmist prediction might come true; fewer than 70 of these majestic white birds remained. In a last-ditch effort to preserve the magnificent trumpeter, President Franklin D. Roosevelt in 1935 issued an executive order establishing the Red Rock Lakes National Wildlife Refuge in the Centennial Valley of extreme south central Montana. This action set the stage for preservation of important trumpeter habitat, and the trumpeter population subsequently benefited.

The Centennial Valley is one of the most remote and inhospitable regions in Montana. With an elevation averaging well over 6,000 feet, the valley hosts the longest winters in the United States, excluding Alaska. Snowfall averages about 150 inches per year and temperatures of -50°F. are not uncommon. The only real indication of man's presence is the great herds of cattle which, along with antelope and moose, graze on the lush summer vegetation. The valley embraces grasslands and marshes, connected by a maze of meandering streams and shallow lakes. In the brief summer, this wild country erupts in a burst of greenery, and wildlife flourishes.

The refuge, managed by the U.S. Fish and Wildlife Service (FWS), lies at the eastern end of the Centennial Valley in Beaverhead County, about 40 miles west of Yellowstone National Park. Summer access to the refuge comes via a dirt road between Monida and West Yellowstone, Mont. Snow machines provide the only winter access.

The Centennial Mountains, rising over 10,000 feet to form the southern boundary of the valley, markedly contrast with the gently rounded, sagebrush-covered Gravelly Range to the north. Heavy timber, which gives way to sheer rock faces and rugged escarpments, accentuates the splendor of the valley and creates a refuge which former FWS Director Ira Gabrielson termed, "scenically, the most beautiful of all."

Timbered slopes and rocky basins capture the heavy winter snows, providing a constant water supply for the lakes and marshlands below. Four

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major streams feeding the refuge originate in the steep-sloped Centennials—Red Rock, Elk Spring, O'Dell and Tom creeks. Red Rock Creek and its tributary, Hellroaring Creek, are the most distant sources of the Missouri River.

The 40,000-acre refuge comprises two large shallow lakes (Upper and Lower Red Rock Lakes), the marshes and meadows surrounding them, some forest land in the Centennials and some dry sagebrush land in the Gravellys. This wide range of habitat creates a variety of niches for many kinds of wildlife.

Bird life is especially abundant in the refuge, with over 200 species identified. Eighteen different kinds of waterfowl, including significant numbers of canvasbacks and redheads, nest in the refuge each year. In August and September, more than 50,000 ducks and geese gather there for their southward migration. Shorebirds such as long-billed curlews, willets and avocets frequent the mud flats bordering the marshes, while several species of gulls, terns and white pelicans often wing over the refuge. Raptors such as the marsh hawk and golden eagle also reside on Red Rock. And the endangered peregrine falcon is occasionally sighted. Sandhill cranes are common, particularly in the grasslands bordering Upper Red Rock Lake.

Shiras moose often haunt the refuge's willow thickets. Other big game species such as deer, elk and pronghorn antelope browse the grasslands and forests near the marsh. But only the moose remain through the severities of winter. Mink and muskrat also frequent the marsh. Muskrat houses do "double duty," since trumpeter swans use them for nesting platforms.

This vast network of lakes and streams is best explored by canoe. Although movement of the water is almost imperceptible, the Red Rock River can be followed as it wends its way through the marshes. However, boating is permissible only after July 15 to avoid disturbing nesting trumpeter swans.

Although the refuge is best known for the trumpeter's comeback, it is also noted for its Montana grayling population. The population has managed to persist despite severe habitat destruction, both on and adjacent to refuge lands. Formerly found in the Missouri River and its tributaries above Great Falls, now the Big Hole River and streams which form the Red Rock drainage represent some of the last native grayling water in the U.S., outside Alaska. In these waters, the discriminating fisherman can still catch the fish on which Lewis and Clark dined. Several mountain lakes also retain substantial grayling populations, started mostly from planting.

The relative inaccessibility of the area and the harsh climate combine to keep the Centennial Valley isolated. In 1973, Red Rock Lakes National Wildlife Refuge was judged suitable for a wilderness designation. It received a favorable recommendation from the FWS and awaits Congressional approval.

The trumpeter swan, North America's largest and perhaps most majestic waterfowl. Establishment of the Red Rock Lakes National Wildlife

Wilderness stature would affect the refuge in three ways: (1) domestic livestock grazing would continue, but permittees would not be allowed to use motorized vehicles to tend cattle, (2) outboard motors would not be permitted on refuge waters and (3) refuge personnel would be more limited in management techniques, although they would retain use of an airboat for swan banding.

Wilderness designation would not alter the area's

Refuge in southwestern Montana aided the trumpeter by preserving important habitat. photo by Harry Engels

status as a wildlife refuge; the FWS would not lose authority to restrict use or prohibit entry to protect swans. However, the advantages of designating Red Rocks as "wilderness" are not immediately obvious since nothing much would change.

Swans have long appealed to man in an aesthetical sense, as evidenced by early mythology and artwork. Seven different species of swans exist today and two—the trumpeter and whistling swans—are native to North America. Although both are identified by pure white plumage and black feet and bills, the trumpeter, with a wingspread of six feet and weight of 30 pounds, is about one-fourth larger. However, the most remarkable difference between the two birds is their voices. While the whistling swan's call is a muffled, musical whistle, the trumpeter produces a loud, low-pitched bugling note that can be heard from far away.

The trumpeter swan, which may live longer than 30 years, was probably widespread, but never abundant, in North America before arrival of white men. Generally recognized as our largest waterfowl, by weight it is the largest bird in North America. Winston Banko, in his monograph on the species, indicates that early records and observations show the trumpeter wintered as far east as New England and North Carolina, while nesting in Illinois and the Ohio Valley. Banko also states that early evidence shows the Flathead Valley in northwestern Montana once supported trumpeters.

Although the swans provided easy targets for early gunners, the age-old problem of habitat destruction nearly spelled doom for the trumpeter. Whistling swans, which nest farther north than trumpeters, have not had to deal with as much marsh drainage and other types of man-caused habitat destruction, and have managed to maintain a population of about 100,000.

Formation of Red Rock Lakes National Wildlife Refuge aided recovery of the trumpeter population; by the early 1950s, they numbered over 500. Since, swan numbers have wavered between 500-600, and they are found in a 60-square-mile radius around Red Rock, encompassing the tri-state area of Wyoming, Idaho and Montana. Now, according to swan researcher Roger Page, the refuge has probably reached—if not exceeded—its saturation point.

One of the most severe limiting factors for swans in the tri-state area is available wintering grounds, because these birds no longer migrate. Approximately 300 swans winter on two spring-fed lakes which do not freeze over, but other refuge waters usually freeze by the end of October. These small lakes can't supply the vegetation 300 trumpeters need, so refuge personnel usually start artificial feeding in January. About 82,000 pounds of grain were fed to the swans in winter 1974. (The other 200 refuge swans make a short flight into Idaho and winter on Henry's Fork of the Snake River.)

Artificial feeding is generally a poor game management procedure, but in 1939 the FWS didn't want to take any chances with the few remaining swans. In 1971, the FWS experimented to see if swans would migrate if food were not available. Grain was withheld for several weeks. After several swans died, the experiment stopped, emphasizing that once artificial feeding becomes an established pattern, it is very difficult to change. Red Rock trumpeters are therefore an artificially maintained population—dependent on a winter food supply

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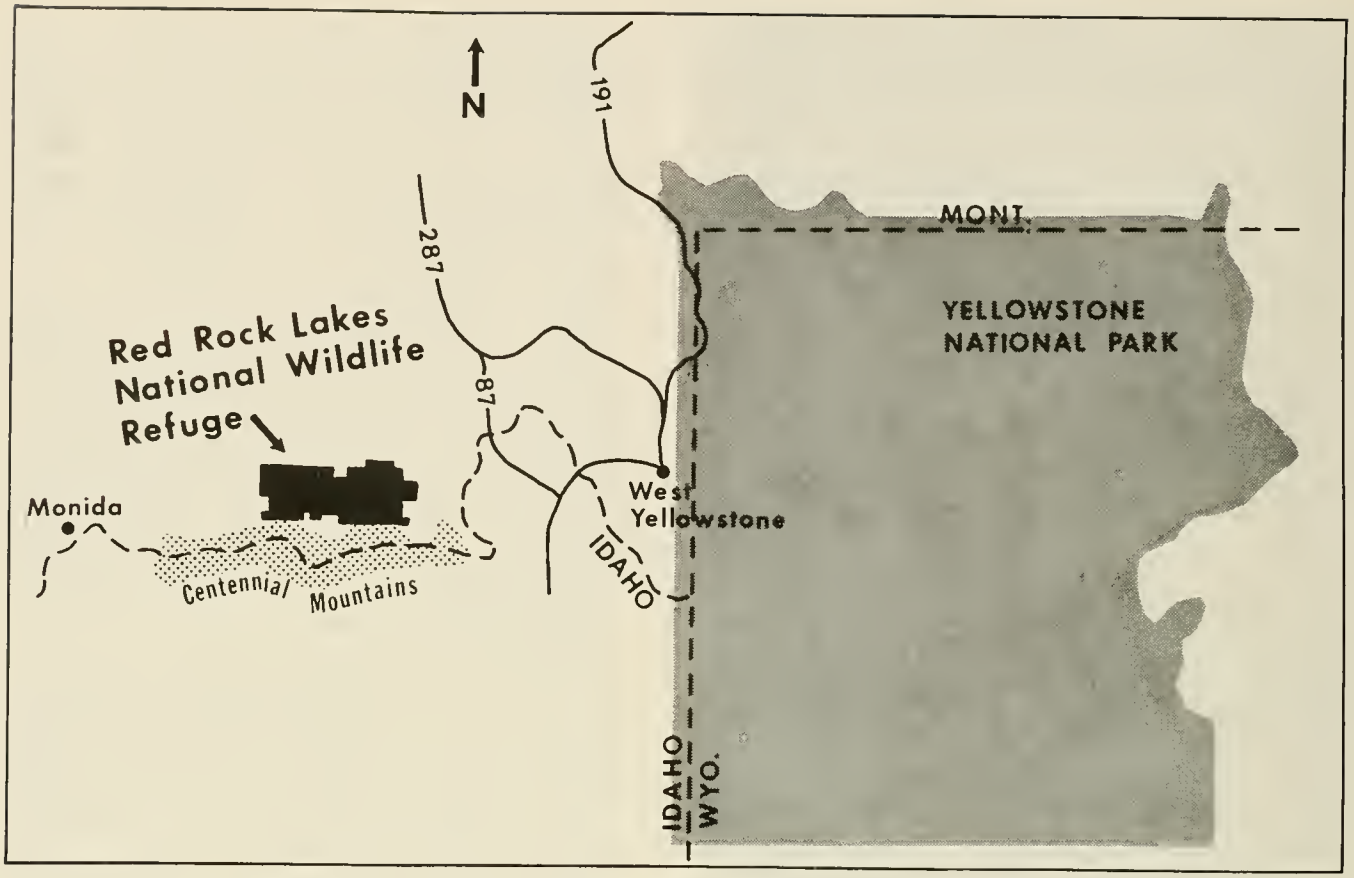

provided by man. When applied to other wildlife, the experience with trumpeters and their dependence on an artificial food supply re-emphasizes the necessity of maintaining natural foods in an unaltered habitat.

When the population leveled off in the early 1950s and signs of crowding appeared, swans were transplanted to areas with suitable habitat in Washington, Nevada, South Dakota and Oregon. At this time, only the swan population at Lacreek National Wildlife Refuge in South Dakota is increasing.

Preserving the trumpeter swan has been the major focus of refuge management since its inception. Banko, former refuge manager at Red Rock, said in 1960, "For all practical considerations, the trumpeter swan has been saved from any immediate threat of extinction in this country." He also added, "The prime goal now is to preserve existing habitat."

The key to preserving any wetland and its complement of wildlife lies in maintenance of proper water quantity and quality. An adequate water supply poses no problem at Red Rock because the heavy snowfall in the Centennials provides a bountiful, year-round source of cold, clean water.

Maintenance of water quality isn't so easy, though. No heavy industry pollutes this far-removed area. Instead, the pollution at Red Rock is much more subtle and cumulative and comes in the form of silt. Excessive siltation, usually caused by man-associated activities such as overgrazing and poor forest practices, kills stream vegetation and other aquatic life. Geological surveys show that soils in the Centennial watershed erode easily.

In the upper Centennial watershed, silt is deposited most heavily in the lower stretches of the streams which feed the refuge and in Upper Red Rock Lake. An early investigator, J. V. Brower, recorded the depth of the lake at up to 25 feet in 1897. Now, few places are deeper than six feet.

Although siltation gradually filling a lake is a natural process, 19 feet in less than 80 years is abnormally rapid. In its wilderness proposal for the refuge, the FWS stated, "Sedimentation will eventually lead to extinction of the lakes, but this is a slow process *with a timetable measured in millenia, unless accelerated by man*" [emphasis added].

The refuge doesn't bear the burden of watershed damage alone. In fact, many of the serious problems occur higher in the watershed, on private and other public land. But since the refuge is downstream, it suffers the consequences.

Coordinated management of the watershed has been difficult, since several different agencies and private individuals own portions of it. Atop the Continental Divide lies land controlled by the Agricultural Research Service (ARS), which is used for experimental sheep grazing. Some range specialists believe this land has been overgrazed and contributes to the eroding soil.

The Bureau of Land Management (BLM) administers the next step down the watershed, generally the steep, heavily forested north slopes of

the Centennials. Past logging sales let by the BLM contributed substantially to the siltation problem. But now the BLM has placed a moratorium on logging in the upper Centennials.

The BLM also allowed a phosphate company to open a pit mine high in the Centennials in 1956. Although the mine was closed in 1958, the mine itself and the access road up O'Dell Creek seriously polluted the area.

Grasslands and meadows intermingled with some trees generally comprise the next section of the watershed, controlled by private landowners. Primary use of this land is cattle grazing. And in places, it's severely overgrazed, which causes siltation. In addition, streams running through this private land have been severely damaged. Streamside vegetation has been grazed down to nothing., resulting in unstable streambanks and, in turn, encouraging bank sloughing and side-cutting. Irrigation, stream diversion and organic pollution from animal waste also contribute to the watershed problems.

The refuge controls the lowest extremities of the upper Centennial watershed and problems are similar to those on private land. Stream channelization (such as that on Red Rock Creek in 1960), irrigation and stream diversions occurred in the past, but have mostly stopped now. Unfortunately, some of the effects of overgrazing and streambank damage don't disappear overnight.

The wildlife refuge leases approximately 24,000 acres of its land for use by an estimated 4,200 head of cattle which graze about 12,000 animal unit months (AUM) annually. (An AUM is the amount of forage it takes to feed one cow for one month.) The FWS earns about $30,000 each year from these grazing leases, according to Refuge Manager Gene Stroops.

Grazing on the refuge has created controversy for several years. Cattle use may adversely affect the refuge in at least three ways: (1) disturbance of nesting waterfowl, (2) damage to the watershed and (3) disruption of the natural setting.

Those who oppose cattle on the refuge often point to the aesthetical considerations, claiming the untouched and pristine nature of the marsh is marred by the sight of large numbers of cattle. "Beside," they argue, "what place do cattle have on a wildlife refuge?"

Many waterfowl biologists wonder about this also. Leo Kirsch of the FWS' Northern Prairie Research Center reviewed scientific literature on the subject and wrote, "I was unable to find a single example where grazing or other cover removal activities increased waterfowl production." He concluded his own study by saying that *elimination of grazing will result in increased waterfowl production.*

continued

Poor watershed management contributes to serious refuge problems. Bureau of Land Management photo by Lew Myers

Since availability of nesting vegetation is one of the most important limiting factors for waterfowl, a major conflict arises. Cattle graze the refuge from July 10-Oct. 10, although this date may be extended. In a normal year, most ducks finish nesting by July 10. However, with a late summer, this date may be moved forward several weeks. For instance, in 1975 many ducks on water areas across Montana were still nesting until the end of July.

To see how this could affect waterfowl production, consider nesting requirements for the lesser scaup, the most common nesting duck on the refuge. The scaup typically nests on land within 10 feet of the shoreline, usually later than other waterfowl. Cold weather may delay its nesting even longer. When cattle are released on July 10, they usually go first to the succulent shoreline vegetation. Extensive activity not only disturbs the nesting birds but could also result in trampled nests, forcing the ducks to move to more inaccessible areas which may already be filled by other nesting ducks.

Aldo Leopold pointed out another important reason for maintaining ungrazed cover in his pioneering book, "Game Management." Leopold noted that since many waterfowl begin to nest before new growth is suitable for nesting, residual cover from the previous year permits birds to nest earlier and thus allows a longer period for renesting. Since grazing extends until Oct. 10, and may be partially extended until Oct. 25, removal of too much vegetation results in a reduction of nesting habitat the following spring. Leopold's early speculations have since been substantiated by scientific studies.

On the other hand, those who favor grazing on the refuge point to economic benefits and state that cattle benefit waterfowl production. "Waterfowl Tomorrow," a FWS book, states, "Regulated grazing by cattle improves and maintains breeding habitat, which otherwise becomes overgrown with low-value, space-consuming vegetation." The FWS offers no scientific evidence to reinforce this theory, however.

Commendably, the FWS is finally taking steps to determine the optimal number of cattle for the refuge. In 1975, refuge personnel began reducing cattle grazing by 10% each year, for a maximum of 5 years. The program can be halted when the FWS feels an optimal number of cattle for the wildlife refuge has been determined.

Overgrazing is only one of several factors leading to excessive siltation which, in turn, speeds up such natural processes as plant succession and the filling in of a lake. While it is difficult to gauge how this acceleration affects resident wildlife, one thing is clear: Rapid changes in the environment usually mean less wildlife. Evidence is strong that change at Red Rock is occurring very rapidly. Watson Beed, in his 1955-56 survey of Upper Red Rock Lake, calculated that the bottom was 88% vegetated and commented that, ". . .the very fertile bottom supports an almost unbelievably abundant and luxuriant plant growth." A 1971 survey revealed only 44% of Upper Red Rock Lake vegetated. It exhibited the most sparsely vegetated bottom of any of the areas surveyed. How this affects wildlife is demonstrated by the history of a particular type of vegetation, waterweed (*Elodeo canadensis*), the preferred food of the trumpeter swan, and one which ducks also take. In the last 20 years, waterweed has dwindled from what one biologist described as "thick stands," to its present state of practically nonexisting. Luckily, both the trumpeter and ducks use other food sources. But quite possibly, the need for artificially feeding swans during the winter is a direct result of loss of native vegetation due to livestock overgrazing. Too many swans for the available habitat (remember—swans are maintained at an artificially *high* level) may also have contributed to the decrease in vegetation.

Siltation can also devastate the refuge fishery, especially the grayling. The grayling suffers when stream bottoms become muddy and water temperatures rise, conditions which favor rough fish. A historical decline of grayling has been recorded in the upper Centennial and many streams which once contained large numbers no longer do.

Concern has been voiced for this last relic of Montana's native stream-inhabiting population, but management of the fisheries has never held a very high priority on the refuge, despite the fact that fishing is the highest refuge use. An apparent lack of concern for the fishery in the 1950s and 60s, evidenced by such destructive practices as stream diversion, channelization and overgrazing, caused Department of Fish and Game biologists to complain in a report, "There are certainly conflicting interests in this area and cattle as well as swan apparently have priority over grayling." The department further stated that expensive management procedures could not be justified until the FWS "considers perpetuation of the grayling as an active function of the refuge."

Although the refuge hasn't yet placed a management priority on the grayling, according to Stroops, the agency has become concerned. The first action which aided grayling was returning diverted or channeled streams to their original channels. Next, irrigation was halted on the refuge in 1973. Also, the grazing reduction started in 1975 should help to re-establish good stream habitat.

With the grayling primarily in mind, a thorough fisheries inventory over the entire upper Centennial watershed was started in 1975 and will run through 1977. This study should provide the key to future management.

The study, cooperatively arranged with the FWS, BLM, Forest Service (FS) and Department of Fish and Game, will determine water quality, quantity and fisheries environmental problems in the Upper Centennial Valley related to past and present stream-related land use practices.

The Department of Fish and Game is inventorying the fisheries, including an investigation of both the

range and number of grayling in their historic waters.

Initial phases conducted in 1975 have brought some discouraging results. In the spring, biologists found numerous grayling in Red Rock Creek, many in spawning condition. Remarkably large, many weighed over two pounds, approaching the state record of two pounds, ten ounces. While this was good news, biologists in subsequent fall studies found *no grayling* in the stream. The population has moved into Upper Red Rock Lake, where habitat may not be capable of sustaining it. Siltation was the obvious problem as very little aquatic life exists in the lower reaches of Red Rock Creek. With the current rate of sedimentation in Upper Red Rock Lake, the grayling's future at Red Rock appears insecure.

The BLM is gathering water quality, quantity and stream data on BLM and privately owned lands. The FWS is doing the same for refuge land and the FS for national forests.

Biologists inventorying the fisheries acknowledge that many problems are already obvious. Streambeds such as O'Dell Creek, dry because of irrigation, speak for themselves, as do the bare and crumbling streambanks.

The study will isolate problem areas so proper management can be formulated. Norm Peterson, a department fisheries biologist involved in the study, said, "Some of these streambanks can only be described as very tender; the misuse they have suffered may take a long time to heal." Peterson, along with other fisheries biologists, feels these lands can recover with enough time and protection from additional use.

Although some of the watershed's problems might be resolved, officials have little jurisdiction over private land, where serious habitat deterioration affecting the refuge also occurs. Testifying to this, Peterson notes, "Refuge problems are minor compared to those on private land." Stream diversion for irrigation and streambank deterioration from overgrazing pose the most serious problems on private land. Tom Creek, formerly a grayling spawning area, is completely dewatered in some sections; cattle have severely damaged Red Rock Creek, the major grayling stream in the watershed. Private land management is very significant because many of the major grayling spawning grounds lie on private land and thus can't be controlled without the landowner's cooperation.

The key to preserving this important remnant of Montana's stream-dwelling grayling population lies in how well the various agencies and landowners work together to establish satisfactory management. Perpetuation of the grayling must be regarded by all parties as desirable, as must the right of ranchers to earn a living without undue constraint.

To maintain a quality watershed, action must start at the top of the Centennials and proceed down to refuge lands. Primitive designation, such as that planned for BLM lands and possibly ARS lands, would be a large step toward maintaining the upper valley.

The private landowner might be asked to fence streambanks in troublesome areas. Assistance in setting up good rest-rotation grazing systems might also help. Maintaining minimal water flows in all streams is necessary for a viable fishery. Above all, cooperation and a unified effort to preserve the watershed are necessary.

The refuge soon faces serious problems, some within its control, others not. The apparent "death" of lower Red Rock Creek and the rapid decrease in submerged vegetation in Upper Red Rock Lake may signal what lies ahead. If man-related watershed problems are not corrected, current siltation problems will only intensify.

The FWS must take a hard look at grazing on Red Rock Lakes National Wildlife Refuge, in terms of insuring optimum waterfowl production, protecting the natural setting and maintaining the quality of the watershed. Current reduction of cattle grazing the refuge is a step in the right direction, and should slow some of the damage.

The problem relates to whether or not grazing is a legitimate use of the refuge, particularly in light of pending wilderness designation. To properly manage grazing, man-made improvements such as fencing are a necessity. However, with wilderness designation, man-made improvements won't be allowed. Grazing is permitted on wilderness areas where it has been an established use. But it may conflict with the definition of wilderness in the Wilderness Act of 1964, which says, "the imprint of man's work" should be "substantially unnoticeable." Also of concern is the artificial feeding and maintenance of the trumpeter population—this is an "imprint of man's work."

Economic benefits of continued refuge grazing are miniscule when weighed against the costs. Short-term attempts at controlling siltation, such as the Red Rock Creek channelization fiasco and construction of water control structures, have been costly, inefficient and detrimental. A price can't be placed on seeing a huge trumpeter swan flying gracefully overhead or catching a record size grayling. Nevertheless, we must weigh that value.

It will be a sad statement indeed if the Red Rock fisheries study turns out to be a post-mortem investigation where biologists do their work and end up by saying, "Yep, it's dead all right."

If there is any place where we must always give wildlife the benefit of the doubt, it is on our national wildlife refuges. If we can determine, by scientific study, that cattle can benefit the watershed and waterfowl, then—and only then—should we consider grazing. At Red Rock Lakes National Wildlife Refuge, this proper procedure has been reversed. The wildlife refuges must remain both a stronghold and a fortress—protected areas where wildlife can't lose.

SAUGER

Foolish fishermen pass up this good tasting, hard fighting, warm-water game fish

by Mike Haddix

WITH the excellent trout fishing in the western part of the state, many Montana anglers neglect the varied warm-water fisheries in eastern Montana. Because of its willingness to strike a variety of baits and lures, good fighting qualities and tasty flesh, the sauger ranks as one of the most popular warm-water game fish.

Native to Montana, the sauger (*Stizostedion canadense*) inhabits the Missouri River drainage below Great Falls and the Yellowstone drainage below Billings. It was first sighted in Montana by the Lewis and Clark Expedition (1803-1806). The sauger's range extends across southern Canada from Alberta to Quebec, south to Alabama and Texas and west of the Appalachians to Wyoming and Montana. Preferred habitat includes turbid rivers and shallow, muddy portions of lakes and reservoirs.

SAND PIKE OR WALLEYE?

Many anglers confuse the sauger—or sand pike as it's commonly called—with its close relative, the walleye (*Stizostedion vitreum*). Anglers often identify both species as "pike," but that's definitely a misnomer since both belong to the perch family. Possibly their large mouths and formidable canine teeth led to this misunderstanding, although the generic name for both species—*Stizostedion*—means "pungent throat."

The average sauger taken in Montana weighs about one pound, although fish in the two- to three-pound class are common. John Hafla took the state record sauger, weighing five pounds, from the Tongue River in 1974. Fish and Game personnel studying sauger in the Yellowstone River report tagging several in the seven-pound class, indicating a good chance for some lucky angler to crack the record. The world record sauger weighed eight pounds, twelve ounces and was caught in 1971 in Lake Sakakawea, N. D.

Walleye grow much larger than sauger, although the average size in most Montana rivers is about the same. Neil Berg caught the

Although similar to the walleye, the sauger can be distinguished by several rows of fairly uniform black spots on the dorsal fin (the front fin on the back) and by white coloration along the bottom of the tail. F&G photo by Bob Newell

14-pound state record walleye from Nelson Reservoir in 1974.

Sauger spawn in gravelly or rocky areas in the spring, when water temperatures reach 40-50°F. Usually in the evening, a group of males move onto the shallows and await the females ready to spawn. Sauger build no nests; the eggs are fertilized after they are shed and settle to the bottom. Hatching takes place in 25-29 days. Before and during spawning, sauger move upstream and concentrate below dams and irrigation diversions. Many also move into tributary streams to spawn.

When very small, the young fish feed on zooplankton. But they grow rapidly and soon eat insects and fish smaller than themselves, including other sauger. By the time they reach adulthood, sauger are highly piscivorous (feeding almost entirely on other fish).

ANGLING TIPS

Angling for sauger in rivers is usually best during the spawning periods of April-May and September-October when rivers are low and clear with cooler water temperatures. Try your luck in the evening or on heavily overcast days when sauger move into shallow areas to feed. The sauger's eyes are extremely sensitive to light, so they move into deeper water during daylight where the sun's rays are less direct.

If you catch one sauger, chances of catching another in the same location are good, since they travel in schools. Once you locate a hot spot, it will probably produce fish throughout the season. As mentioned earlier, sauger concentrate below dams and irrigation structures when they spawn in spring, so these areas sometimes provide exceptional fishing. Other likely spots include slack water below fast riffles and mouths of flowing tributaries. In the live bait category, try minnows or night crawlers. Wobbling spoons, Finnish minnows and spinners seem to be the most productive lures.

ANGLING HOT SPOTS

If you don't know where to fish for sauger in your area, these tips may help:

•Missouri River—below Great Falls, below Morony Dam. Below Fort Peck, good for sauger with a few walleye.

•Teton, Marias, Judith and Musselshell rivers—in the lower reaches, great fishing in the spring.

•Fort Peck Reservoir—most areas, especially in the main arm. Try Big Dry Arm for walleye.

•Milk River—lower stretch, fair angling for both sauger and walleye.

•Yellowstone River—below Billings, especially around diversion dams at Huntley, Waco, Myers, Forsyth and Intake.

•Bighorn and Tongue Rivers—good angling throughout the year.

When it comes to table fare, the sauger just can't be beat. Its firm, white flesh makes it one of the best tasting fresh-water fish. Fillet the fish, dip it in a light, seasoned batter and fry. Although you can find many other recipes for sauger, this is the simplest and one of the best.

The daily limit of sauger varies from district to district, so check local fishing regulations. Most of Montana's major lakes, reservoirs and streams are open year round so don't neglect the warm-water fishery in eastern and central Montana—catch a sauger.

The walleye's dorsal fin does not have rows of black spots as the sauger's does. Instead, the walleye has a dark blotch in the lower rear corner of the dorsal fin. (It's difficult to see in this picture.) Also, only the lower tip of the tail is white. photo by Jim Whitcomb, courtesy of Texas Parks & Wildlife

DEPARTMENT PROJECTS:

The Audio-Visual Center

by Paul Bushaw

WE'VE all heard the axiom, "One picture is worth a thousand words." At the Montana Department of Fish and Game Audio-Visual Center, we endeavor to supply those pictures—pictures in motion on a movie screen, pictures in black and white or color used in displays and exhibits, those projected on a screen in slide presentations, pictures on your TV screen and photographs for *Montana Outdoors.*

Audio-Visual Center film crew led by Craig Sharpe (right) filming grizzlies in the Sun River country for the department's new movie, "Room to Live." F&G photo by Tom Warren

When we lack the ability to inform you visually, we try to make "word pictures" via local radio stations. Subjects for these pictures are part of Montana, the broad spectrum of wildlife from moose to mouse, as well as human activities involving wildlife.

As part of the Environment and Information Division, the Audio-Visual Center produces motion pictures for theaters and TV, programs and public service announcements (PSA's) for radio and TV and maintains a photo studio and laboratory for processing film and prints.

MAKING MOVIES

The educational and entertainment values of motion pictures are fully utilized by the department's Environment and Information Division. Responsibility for completing ongoing movie-making projects lies in the experienced hands of Tom Warren, project leader, and Craig Sharpe, audio-visual specialist. Their professionalism is evidenced by awards for excellence received from groups such as the American Association for Conservation Information and the Outdoor Writers Association of America. Perhaps the highest award of all is approval of Montanans who view the finished product. Audio-Visual Center personnel are responsible for writing scripts for full-length features and PSA's aired on statewide TV stations.

The process of making a film goes something like this: A need for a movie is determined, then Audio-Visual Center personnel put together a voluminous script. They scout site locations and take field trips to secure footage of the wildlife and habitat featured in the film. Actual filming requires from 75-80% of the total time and effort. During filming, the script is constantly revised. The Center strives for the ideal combination of pictures and words and it is not unusual when pictures on the screen successfully replace many pages of script.

The natural sounds of an area are recorded for the sound track, hopefully to provide an added dimension to the finished product. Sounds that correspond to the picture are selected, like hearing the song of a meadow lark while seeing an early morning priarie scene. These sights and sounds combine throughout the film in a pleasing, realistic way.

Narration might be recorded beforehand and the movie built around it, or the movie could be put together first with the voice following the film. Idea, script, footage, voices and sounds all come together in the editing room, the "kitchen" of the movie business. All ingredients are combined here and the end result is "served up" on a movie screen or TV set.

Approximately two new movies are released yearly by the department. Recent releases include a film about the grizzly bear in Montana, titled, "Room to Live." Produced, directed and edited by Sharpe, the film recently won a bronze medal in the environmental documentaries class of the International Film and TV Festival.

TAKING PICTURES

From grizzly bear to water bugs—you name it and we can probably find it in the center's files, either on

a color slide or a black and white print. Department personnel constantly record the various aspects of department business.

The photos and slides are used for public information displays, hunter safety instruction, restoration records of historical sites, explaining department projects, studying activities of wildlife and showing the ruination and degradation in some parts of Montana compared with the beauty and wonder of others.

A slide series used for the hunter safety program provides an excellent example of the effectiveness of photography in the education process. A hunter safety instructor could explain verbally what a gunshot wound looks like and perhaps hold the students' attention long enough to tell the story. By showing them a few slides in vibrant color of horrible, gaping holes in human bodies caused by careless use of firearms, a lasting impression is created.

The center is equipped to process black and white film, including movie film. Although little movie footage is photographed in black and white, copies of color film are made in black and white and then used as work prints. Color film is mailed out for processing.

USING RADIO

The newest full-time addition to Audio-Visual Center activity is radio production. In addition to the extensive radio work done by the department's seven district information officers, a program called "Montana Outdoors" is produced. About five minutes long, these programs are aired on 39 radio stations across the state according to the individual station's schedule. Scripts are prepared at the center.

In recent years, recording equipment has been updated to produce high-quality programs. Two recorders are utilized—one strictly for studio use and the other for both synchronous sound recording in movie making and combining introductions and sound effects for radio programs. An insulated, soundproof room was built in the center and voice recording for radio and narrations for various types of film are done there.

With the current setup, two persons are required to operate the system—the announcer in the sound room reading the script and someone to run the equipment from an adjoining room.

After five or six programs have been recorded, the master tape is delivered to a Helena recording company where about 40 copies are made. The tapes are then mailed to individual radio stations.

Content of the programs usually is dictated by season. For example, in the spring we might talk about the spring black bear season or how to prepare for hiking and boating. Of course fall means hunting birds and big game, so regulation changes or information about care of game once it has been bagged are examples of possible programs. Program content is flexible and we welcome suggestions for programs that might be of interest to our listeners. Write to Paul Bushaw, radio productions, Department of Fish and Game; Helena, MT 59601.

In 1975, our first year with an extensive radio production effort, we received third place in the radio programs division of an international competition sponsored by the American Association for Conservation Information.

The department's Audio-Visual Centers supplies informational and educational materials to schools, hospitals, sportsmen's organizations, nursing homes, environmental groups, scouts, TV stations, hunter safety groups, boating safety classes, church groups, government agencies, fraternal organizations and individuals throughout the state.

Keeping up with policy changes, publicizing new data from department research, broadcasting regulation changes and just plain old communicating with the people is what we at the Audio-Visual Center are all about.

Julie DiAddezio making black and white prints in the department's darkroom. F&G photo by Paul Bushaw

Paul Bushaw recording the department's weekly radio program, "Montana Outdoors." F&G photo by Julie DiAddezio

**THE STILLWATER COMPLEX—
BOOMING AGAIN**

—see page 19